FRIDAY, APRIL 27

Across Societies—Experimental Biology

1. CAREER TRANSITIONS AND PREPARATION: A WORKSHOP FOR (SENIOR) GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

Workshop

FRI. 8:30 AM—CONVENTION CENTER, ROOM 150A

Career Session

Organized by FASEB Career Resources/MARC Program and the National Postdoctoral Association; Sponsored by The Burroughs-Wellcome Fund and FASEB Career Resources

This FASEB-NPA workshop will address the needs of graduate students nearing the completion of their graduate work and postdoctoral fellows who will soon transition into their first professional appointment. The workshop will provide information regarding common concerns of early-career scientists (including negotiating salary and resources, funding opportunities, interviewing tips, and choosing the right career path); information specific to the needs of senior graduate students and transitioning postdoctoral fellows; and a roundtable session highlighting different career paths.

Organizers: **J. Reuben**, Baylor Col. of Dent.
Dr. C. Butts, NIMH, NIH
J. Roberts, FASEB
A. Reed, Natl. Postdoc Assn.
P. Clifford, Med. Col. of Wisconsin
D. Burgess, Boston Col.
J. Lakoski, Univ. of Pittsburgh
L'A. Johnson, Univ. of Minnesota

8:30 Morning coffee.
9:00 Welcome.
9:05 Thinking about your next steps.
9:25 Career paths.
9:55 Funding options and opportunities.
10:15 Coffee break.
10:30 Negotiations.
10:55 Networking and developing collaborations.
11:20 Laboratory conflict resolution/respecting cultural differences.
11:30 Lunch.

12:00 Career Paths Roundtable Sessions

Roundtables to include experts on different career paths, including science policy, scientific writing, consulting, technology transfer, science education, industry, academia research-research track, government administration-research, non-profits.

1:30 Introduction.
1:35 Breakout sessions (panel discussions).

Group 1: Senior Graduate Students/Junior Postdocs

Presentations to include applying for fellowships, types of training experiences, what PIs seek in prospective fellows, and testimonials of former/current postdoctoral fellows.

Group 2: Senior Postdocs/New Faculty

Presentations to include interviewing/CV tips, mentoring students, committee service, tenure and promotion considerations, managing personnel (laboratory or other settings), and determining the best career based on your strengths.

Pathology

2. AANP SPECIAL COURSE: UPDATE ON BRAIN TUMORS: PROGNOSTIC MARKERS AND CONTROVERSIES IN DIAGNOSIS

Special Registration Required

Satellite Session

FRI. 8:00 AM—RENAISSANCE HOTEL, RENAISSANCE WEST

CHAIRED: *G. FULLER*

ORGANIZED: *B.J. Crain*

Neuropathology

8:00 Introduction and welcome. **G.N. Fuller.** Univ. of Texas M.D. Anderson Cancer Ctr. and **B.J. Crain.** Johns Hopkins Univ. Sch. of Med.

New Markers for Diagnosis of Brain Tumors

8:10 Prognostic markers: molecular testing of GBM. **P.S. Mischel.** UCLA.
9:00 Prognostic markers: molecular testing of diffuse gliomas. **D.N. Louis.** Massachusetts Gen. Hosp.
9:50 Break.
10:20 Prognostic markers: molecular testing and histologic grading of malignant posterior fossa brain tumors. **D.W. Ellison.** Newcastle Gen. Hosp., UK.
11:10 Emerging diagnostic markers: phospho-histone H3, PMP2, and the clinical utility of mitotic figure immunostains. **K.D. Aldape.** Univ. of Texas M.D. Anderson Cancer Ctr.
12:00 Lunch (provided).

Controversies in Diagnosis of Brain Tumors

1:15 Controversies in surgical neuropathology: glioneuronal tumors: How many types are there? How do you diagnose them? **M.K. Rosenblum.** Mem. Sloan-Kettering Cancer Ctr.
2:05 Controversies in surgical neuropathology: what is a mixed glioma? **G.N. Fuller.** Univ. of Texas M.D. Anderson Cancer Ctr.
2:55 Break.

3:20 Controversies surrounding brain tumor stem cells. **C.G. Eberhart.** Johns Hopkins Univ.
4:10 New and interesting entities. **P.C. Burger.** Johns Hopkins Univ. Hosp.
5:00 Closing comments. **G.N. Fuller.** Univ. of Texas M.D. Anderson Cancer Ctr.

3. AANP BUSINESS MEETING

Business Meeting

FRI. 5:30 PM—RENAISSANCE HOTEL, RENAISSANCE EAST

CHAIRED: *B.J. CRAIN*

4. AANP WELCOMING SOCIAL

Special Session

FRI. 6:30 PM—RENAISSANCE HOTEL, RENAISSANCE EAST

Pharmacology

5. ASPET 3RD GPCR COLLOQUIUM — DAY 1

Satellite Session

Separate, Pre-registration Required

(*Sponsored by:* ASPET's Division for Molecular Pharmacology)

(Supported by educational grants from AstraZeneca, Johnson & Johnson, Merck Research, Wyeth Research, and ASPET's Division for Neuropharmacology, with support for the Keynote Lecture by ASPET's Division for Molecular Pharmacology)

FRI. 7:30 AM—CONVENTION CENTER, ROOM 204 A/B/C

CHAIRED: *K.A. NEVE*

COCHAIRED: *O. CIVELLI*

7:30 Continental breakfast.
8:00 Introduction. **K.A. Neve.** Portland VA Med. Ctr., Oregon Hlth. & Sci. Univ.
8:10 The structural basis for GPCR oligomerization: implications for activation. **J.A. Javitch.** Columbia Univ. Col. of P & S.
8:50 Heterooligomerization of class A GPCRs creates novel signaling units distinct from their constituent GPCR homooligomers. **S.R. George.** Univ. of Toronto.
9:30 GPCR ligand binding and release: insights and mysteries. **D.L. Farrens.** Oregon Hlth. & Sci. Univ.
10:10 Break and posters.
10:40 G proteins and their accessory proteins. **S.M. Lanier.** Med. Univ. of South Carolina.
11:20 Talk from selected abstracts.
11:50 Lunch.
1:20 Interactions between GPCRs and receptor tyrosine kinases. **K.J. Catt.** NICHD, NIH.
2:00 GPCRs, arrestins, and ubiquitination. **S.K. Shenoy.** Duke Univ. Med. Ctr.
2:40 Talk from selected abstracts.
3:10 Break and posters.
3:40 Multiplexing resonance energy transfer approaches to study GPCR signaling complexes in living cells. **M. Bouvier.** Univ. of Montreal.
4:20 Use of genetically engineered mice to unravel the functions of dopamine receptors. **E. Borrelli.** Univ. of California-Irvine.
5:00 Conclusion.

6. BEHAVIORAL PHARMACOLOGY SOCIETY MEETING — DAY 1

Satellite Session

FRI. 1:00 PM - 6:00 PM—CONVENTION CENTER, ROOM 201

CHAIRED: *G.R. WENGER*

SEPARATE, PRE-REGISTRATION REQUIRED

SATURDAY, APRIL 28

Across Societies—Experimental Biology

7. LEADERSHIP IN THE LAB: INCREASING THE RESEARCH PRODUCTIVITY OF YOUR TEAM

Special Session

SAT. 9:00 AM—CONVENTION CENTER, ROOM 151A

Career Session

Recent studies have shown that certain leadership strategies can increase the number of publications generated by your research team and improve the satisfaction levels of your research personnel, while also reducing interpersonal conflict. Participants will learn effective strategies and tactics for increasing the research productivity of graduate students and postdoctoral scholars as part of a well-managed team. Presenters will highlight best practices based on evidence gathered from a wide variety of research institutions throughout the U.S.

MODERATOR: **J. Lakoski,** Asst. Vice Chancellor, Off. of Acad. Career Develop., Univ. of Pittsburgh

Panel Discussions

- Overview of Data from the Sigma Xi Postdoc Survey
- Best Practices
- Structured Mentoring
- Reducing Conflict

Anatomy

8. SURVIVAL TECH: TOOLS FOR MASTERING CURRICULAR CHANGE IN ANATOMY

Workshop

SAT. 10:30 AM—CONVENTION CENTER, ROOM 103B

CHAIRED: *R. TRELEASE*

10:30 Introduction.
10:35 **8.1** Better learning through less teaching: eliminating lectures. **T.R. Gest.** Univ. of Michigan Med. Sch.
10:55 **8.2** Human morpho-informatics: teaching anatomy by the numbers. **D.R. Hilbelink.** Univ. of South Florida.
11:15 **8.3** Neato nifty cool or pedagogical advance? Designing effective web-based tools. **L.J. Rizzolo, W.B. Stewart, M. O'Brien and A. Haims.** Yale Univ.
11:35 **8.4** Diffusion of innovations: new media and lessons from the iPod. **R. Trelease.** David Geffen Sch. of Med. at UCLA.
11:55 Discussion.

9. MASTER CLASS: KIDNEY STRUCTURE AND FUNCTION

Symposium

SAT. 12:30 PM—CONVENTION CENTER, ROOM 103B

CHAIRED: *V. GATTONE*

12:30 **9.4** The kidney — introduction to its structure and function. **V.H. Gattone.** Indiana Univ. Sch. of Med.
12:50 The glomerules: an intricate cellular filter. **L. Bersoni**. NYU.
1:20 **9.1** Renal tubules: diversity with distinction for therapies and disease. **R. Bacallao.** Indiana Univ. Sch. of Med.
1:40 **9.2** Tubuloglomerular feedback — a system for nephron self-regulation. **J. Schnermann.** NIDDK, NIH.
2:00 **9.3** Normal and abnormal kidney development. **D. Hyink.** Mount Sinai Sch. of Med.

2:20 Discussion.

10. EMERGING TECHNOLOGIES FOR IMAGING EMBRYONIC CARDIOVASCULAR STRUCTURE AND FUNCTION

Workshop

SAT. 12:30 PM—CONVENTION CENTER, ROOM 156

CHAIRED: *F. ROTHENBERG*

COCHAIRED: *J. LUCITTI*

12:30 Introduction.
12:35 **10.1** Ultrasound phenotyping of embryonic cardiovascular development. **C.K.L. Phoon.** NYU Sch. of Med.
1:00 **10.2** 4D, high-speed confocal imaging reveals functional changes during cardiac development in vertebrate embryos. **M.E. Dickinson.** Baylor Col. of Med.
1:25 **10.3** Calcium waves in embryonic hearts. **G. Salama, R. Doran, B-R. Choi, M. Kotlikoff and Y.N. Tallini.** Univ. of Pittsburgh, Cornell Univ. and Tulane Univ.
1:50 **10.4** Optical coherence tomography for embryonic cardiography. **A.M. Rollins, M.W. Jenkins, O. Chugtai, P. Patel, M. Watanabe, H. Deng, M.M. Montano and F. Rothenberg.** Case Western Reserve Univ. and Univ. of Cincinnati.
2:15 Discussion.

11. IN VIVO IMAGING OF DEVELOPMENT: FOCUSING ON CELL MIGRATION AND SHAPE CHANGE

Workshop

SAT. 3:30 PM—CONVENTION CENTER, ROOM 156

CHAIRED: *P. KULESA*

3:30 Introduction.
3:35 In vivo imaging of neuronal migration. **M.B. Hatten.** Rockefeller Univ.
4:00 **11.1** Pushing and pulling migrating tissues in vivo with GPCRs. **D. Gilmour, P. Haas, G. Cakan, V. Lecaudey, G. Valentin, J. Colombelli and E. Stelzer.** EMBL, Heidelberg.
4:25 **11.2** Novel modifications to the mechanism of cell division in neural epithelial cells during vertebrate neural tube closure. **J. Wallingford and E. Kieserman.** Univ. of Texas at Austin.
4:50 **11.3** Using advanced imaging techniques to study in vivo cellular and molecular events of neural crest cell migration. **P.M. Kulesa.** Stowers Inst. for Med. Res.
5:15 Discussion.

12. LANGMAN GRADUATE STUDENT AWARD SESSION

Special Session

SAT. 3:30 PM—CONVENTION CENTER, ROOM 158

CHAIRED: *R. PRATT*

3:30 Non-muscle myosin IIA is required for skeletal muscle myoblast fusion. **R. Duan and P.J. Gallagher.** Indiana Univ. Sch. of Med. **(439.8)**
3:45 Using $CD34^+$ cells to stimulate vascularization and inhibit encapsulation of implantable bioartificial devices. **M.R. Sukup, L. Rodewald, H. Hansen, V.G.J. Rodgers and G.C. Schatteman.** Univ. of Iowa and Univ. of California-Riverside. **(324.3)**
4:00 In situ transduction by virus localization on bioengineering scaffolds for bone regeneration. **W-W. Hu, Z. Wang, S.J. Hollister and P.H. Krebsbach.** Univ. of Michigan and Univ. of Michigan Sch. of Dent. **(315.1)**
4:15 Treatment of endothelial cells in vitro with varying concentrations of diesel particles and carbon black. **M-W. Chao, A. Pettit, D.R. Gerecke, R. Laumbach and M.K. Gordon.** Rutgers Univ. and UMDNJ-Robert Wood Johnson Med. Sch., Piscataway. **(73.5)**
4:30 VEGFR2 regulates p38 but not ERK1/2 in response to shear stress. **E.A. Gee, M. Milkiewicz and T.L. Haas.** York Univ., Canada and Pomeranian Med. Univ., Poland. **(318.6)**
4:45 Masticatory micromovement in mandibular distraction osteogenesis and its effect on bone growth. **Z. Sun, K. Rafferty, M. Egbert and S. Herring.** Univ. of Washington and Children's Hosp., Seattle. **(315.4)**

13. PRESLEY-ZEISS POSTDOCTORAL STUDENT AWARD SESSION

Special Session

SAT. 5:30 PM—CONVENTION CENTER, ROOM 158

CHAIRED: *B. SINGH*

5:30 Abnormal coronary tree development in embryonic hypoxia leads to heart failure and embryonic lethality.˜: **O. Naňka, D. Sedmera and M. Grim.** Charles Univ. in Prague First Fac. of Med. and Inst. of Animal Physiol. and Genet., Acad. of Sci. of Czech Republic. **(778.8)**
5:45 Positional fate map reveals a unified heart forming region. **C. Cui, C.D. Little and B.J. Rongish.** Univ. of Kansas Med. Ctr. **(437.5)**
6:00 Deficient embryonic expression of SIX2 is associated with decreased glomerular number and chronic renal failure in the adult 3H1 Br/+ mouse. **B. Fogelgren, I.C. Sharp, S. Yang, W. Ma, M. Himenes, C.F. Uyehara and S. Lozanoff.** Univ. of Hawaii Sch. of Med. and Tripler Army Med. Ctr., HI. **(321.4)**
6:15 Expression analysis of CITED2 mRNA during chicken heart development. **K. Yang, Y-Q. Doughman, S. Zaidi, T. Brand, Y-C. Yang and M. Watanabe.** Case Western Reserve Univ., Rainbow Babies and Children's Hosp. and Tech Univ. of Braunschweig, Germany. **(437.7)**
6:30 Immortalized mouse epicardial cells undergo differentiation in response to transforming growth factor-β. **A.F. Austin, L.A. Compton, J.D. Love and J.V. Barnett.** Vanderbilt Univ. and Univ. of Southern Indiana. **(778.4)**
6:45 Functional gap junction hemichannels are generated in vivo during infectious enteric disease. **J.A. Guttman, A.E. Lin, Y. Li, C. Naus, A.W. Vogl and B.B. Finlay.** Univ. of British Columbia. **(186.4)**

Biochemistry and Molecular Biology

14. ASBMB GRADUATE/POSTDOCTORAL AND GRADUATE MINORITY TRAVEL AWARD PROGRAM

Special Session

SAT. 9:30 AM—CONVENTION CENTER, ROOM 202B

CHAIRED: *K. DODGE-KAFKA, J. DENU, A. MILLER*

15. OUTREACH IN ACTION

Workshop

SAT. 10:00 AM—CONVENTION CENTER, ROOM 208A/B

CHAIRED: *N. GROVER*

Education and Professional Development Committee Sponsored Workshop

16. TACTILE TEACHING

Workshop

SAT. 10:00 AM—CONVENTION CENTER, ROOM 203A/B

CHAIRED: *T. HERMAN*

Education and Professional Development Committee Sponsored Workshop

17. ASBMB 11TH ANNUAL UNDERGRADUATE STUDENT RESEARCH ACHIEVEMENT AWARD POSTER COMPETITION

Special Session

SAT. 1:00 PM—CONVENTION CENTER, EXHIBIT HALL C

CHAIRED: *K. CORNELY, P. ORTIZ, J. PROVOST, AND M. WALLERT*

18. ASBMB OPENING LECTURE AND HERBERT TABOR/JOURNAL OF BIOLOGICAL CHEMISTRY LECTURESHIP

Special Session

(Supported by an educational grant from Cadmus)

SAT. 6:00 PM—CONVENTION CENTER, BALLROOM C

6:00 Introductory remarks. **J.E. Dixon.**

6:05 **18.1** Tyrosine phosphorylation: from discovery to the kinome and beyond. **T. Hunter.** Salk Inst.

6:50 **18.2** Phosphotyrosine signaling: a prototype for modular protein-protein interactions. **T. Pawson.** Samuel Lunenfeld Res. Inst., Mount Sinai Hosp., Toronto.

19. ASBMB OPENING RECEPTION

Special Session

SAT. 7:30 PM—CONVENTION CENTER, 3RD FLOOR FOYER

This Special Session immediately follows the Opening Lecture.

Nutrition

20. ADVANCES IN RESEARCH METHODS: LIPIDOMICS

Workshop

(Supported by an educational grant from Avanti Polar Lipids and NIH)

SAT. 8:00 AM—RENAISSANCE HOTEL, GRAND BALLROOM SOUTH

CHAIRED: *A. MERRILL*

COCHAIRED: *E. DENNIS*

8:00 Overview of the Lipid Maps Consortium and world-wide lipidomics. **E. Dennis.** UCSD.

8:15 Analytical technologies panel. **A. Merrill.** Georgia Inst. of Technol.

8:25 General principles and neutral and phospho-glycerolipids. **R. Murphy.** Univ. of Colorado Hlth. Sci. Ctr.

9:15 Sphingolipids (and precursor fatty acly-CoAs). **C. Sullards.** Georgia Inst. of Technol.

9:45 Sterols. **J. McDonald.** Univ. of Texas Southwestern Med. Ctr.

10:15 Eicosanoids. **R. Harkewicz.** UCSD.

10:45 Novel lipid analysis. **T. Garrett.** Duke Univ.

11:15 Internal standards for lipidomic analysis. **W. Shaw.** Avanti Polar Lipids Inc., Alabaster, AL.

11:30 Data handling and bioinformatics, pathway visualization and interpretation. **E. Fahy.** UCSD.

12:00 End of formal session, but informal discussion with speakers.

21. 10TH ANNUAL ILSI NORTH AMERICA SPECIAL CONFERENCE: FUNCTIONAL FOODS FOR HEALTH PROMOTION: ROLE OF THE DIET IN AFFECTING IMMUNE SYSTEM FUNCTION

Conference

SAT. 8:00 AM—RENAISSANCE HOTEL, GRAND BALLROOM CENTRAL

CHAIRED: *J. MILNER*

8:00 Overview: critical components of immunity and potential sites of regulation.
8:45 Theamins: a bioactive component in tea and immunostimulation in humans.
9:30 Antioxidant status, stress and immunocompetence.
10:15 Probiotics as modifiers of immunocompetence: implications for irritable bowel syndrome.
11:00 Exercise, energetics and immunity.

22. MEDICAL NUTRITION INSIGHTS: OBESITY, PHYTONUTRIENTS, OXIDATION, INFLAMMATION AND HEART DISEASE

Conference

(Supported by an educational grant from POM Wonderful LLC)

SAT. 8:30 AM—CONVENTION CENTER, ROOM 151B

CHAIRED: *D. HEBER AND G. JENSEN*

8:30 Welcome and brief overview of Medical Council. **D. Heber and G. Jensen.** UCLA Ctr. for Human Nutr. and Vanderbilt Univ. Ctr. for Human Nutr.
8:40 Obesity and inflammation: remodeling of abdominal/visceral fat. **A. Greenberg.** Tufts Univ.
9:10 Discussion.
9:20 Systemic inflammation: the cellular basis of atherosclerosis and phospholipid oxidation. **S. Tsimikas.** UCSD.
9:50 Discussion.
10:00 Dietary bioactives and antioxidation case study: pomegranate polyphenols and inflammation. **D. Heber.** UCLA Ctr. for Human Nutr.
10:30 Discussion.
10:40 Emerging solutions to obesity in the food industry, the clinic and the community. **J.O. Hill.** Univ. of Colorado Hlth. Sci. Ctr.
11:10 Discussion.
11:20 Conclusion.

23. NIH PEER REVIEW: MOVING YOUR APPLICATION THROUGH THE PROCESS

Special Session

SAT. 10:30 AM—CONVENTION CENTER, ROOM 152A

CHAIRED: *S. KIM*

10:30 Chair's introduction.
10:35 Overview of peer review: what is CSR? What do we do? **A.A. Jerkins.** CSR, NIH.
10:50 A system in flux: pilot studies and recent changes. **N.F. Sheard.** CSR, NIH.
11:00 What is the role of the Institute's program officer? **C. Miles.** NIDDK, NIH.
Steps to a successful grant application.
11:15 (a) A new investigator's perspective. **B.P. Atshaves.** Texas A&M Univ.
11:25 (b) The established (new) investigator's point of view. **I. Hamza.** Univ. of Maryland College Park.
11:35 (c) The view from the reviewer. **D.E. Matthews.** Univ. of Vermont.
11:45 Panel discussion.

24. 2007 CARIG ANNUAL CONFERENCE

Conference

SAT. 1:00 PM—RENAISSANCE HOTEL, GRAND BALLROOM NORTH

CHAIRED: *J. MARES*

1:00 James Allen Olson memorial perspectives on carotenoids lecture: the biochemical and molecular basis of carotenoid metabolism. **J. Von Lintig.** Albert Ludwig Univ. of Frieburg.
1:40 Discussion.
1:55 Carotenoids and maternal health in South Asia. **K. West.** Johns Hopkins Univ. Sch. of Publ. Hlth.
2:25 Discussion.
2:35 Break.
2:55 Transport of lutein and zeaxanthin into the tissues and their role in the prevention of vascular disease. **W. Connor.** Oregon Hlth. & Sci. Univ.
3:25 Discussion.
3:40 Chronic supplementation of lutein and zeaxanthin in the female rhesus macaque. **F. Khachik.** Univ. of Maryland College Park.
4:10 Discussion.

25. CLINICAL YOUNG INVESTIGATOR AWARD COMPETITION

Special Session

SAT. 1:30 PM—CONVENTION CENTER, ROOM 151B

CHAIRED: *S.A. ATKINSON*

1:30 Chair's introduction.
1:35 Vitamin C deficiency in a university teaching hospital. **R. Gan, S. Eintracht and L.J. Hoffer.** McGill Univ. and Jewish Gen. Hosp., Montreal. **(226.3)**
1:50 Soy protein isolate increases urinary estrogens and the ratio of 2:16α-hydroxyestrone in men at high risk of prostate cancer. **J.M. Hamilton-Reeves, S.A. Rebello, W. Thomas, J.W. Slaton and M.S. Kurzer.** Univ. of Minnesota, St. Paul, Sch. of Publ. Hlth., Univ. of Minnesota, Minneapolis and VA Med. Ctr. **(112.4)**
2:05 13C-retinol isotope dilution test in a nonhuman primate model of vitamin A toxicity. **A.L. Escaron, K. Penniston, J.P. Mills, J. Howe and S.A. Tanuhimardjo.** Univ. of Wisconsin-Madison. **(113.6)**
2:20 What people are really eating: food intakes relative to recommendations. **J.L. Sieber, S.M Krebs-Smith and J. Reedy.** Univ. of Tennessee and NCI, NIH, Rockville. **(104.1)**

2:35 Changes in insulin and leptin across pregnancy in women with diet-treated gestational diabetes mellitus. **L. Belzer, B. Tepper, A. Ranzini and J. Smulian.** Rutgers, The State Univ. of New Jersey, St. Peter's Univ. Hosp. and UMDNJ-Robert Wood Johnson Med. Sch., New Brunswick. **(682.5)**

These papers are programmed a second time; refer to the bolded program number (in parenthesis) at the end of each presentation.

26. THE SCIENCE OF BOTANICAL SUPPLEMENTS FOR HUMAN HEALTH: A VIEW FROM THE NIH BOTANICALS CENTERS

Workshop

(Supported by an educational grant from Office of Dietary Supplements, NIH)

SAT. 2:00 PM—CONVENTION CENTER, ROOM 150B

CHAIRED: *C.M. WEAVER*

COCHAIRED: *D.F. BIRT*

2:00 Introduction.
2:05 Concept of the Center program. **C. Swanson.** ODS, NIH.
2:25 Standardization of botanicals-definition, identification, verification. **I. Raskin.** Pennington Biomed. Res. Ctr . and Rutgers Univ.
2:45 Newer technologies applied to botanical research. **S. Barnes.** Purdue Univ. and Univ. of Alabama at Birmingham.
3:05 Metabolic syndrome. **W. Cefalu.** Pennington Biomed. Res. Ctr.
3:25 Echinacea and hypericum in infection. **D. Birt.** Iowa State Univ. and Univ. of Iowa.
3:45 Age-related diseases. **C. Weaver.** Purdue Univ. and Univ. of Alabama at Birmingham.
4:05 Botanical lipids in inflammation. **F. Chilton.** Wake Forest Univ. and Brigham and Women's Ctr.
4:25 Botanical immunomodulators in cancer. **B. Cassileth.** Mem. Sloan-Kettering Cancer Ctr.
4:45 Women's health. **N. Farnsworth.** Univ. of Illinois at Chicago.
5:05 Botanical safety. **R. Van Breemen.** Univ. of Illinois at Chicago.

27. PROCTER & GAMBLE GRADUATE STUDENT RESEARCH AWARD ORAL COMPETITION

Special Session

(Supported by an educational grant from The Procter & Gamble Company)

SAT. 2:00 PM—CONVENTION CENTER, ROOM 152B

CHAIRED: *R.B. RUCKER*

2:00 Vitamin D-induced anti-cancer effects are blunted in Ki-RAS transformed human prostate epithelial cells. **Z. Zhang, P. Kovalenko, J. Li, D. Teegarden and J.C. Fleet.** Purdue Univ. **(114.6)**
2:15 Hepatic overexpression of glycerol-sn-3-phosphate acyltransferase-1 causes insulin resistance. **C.A. Nagle, J. An, C.B. Newgard and R.A. Coleman.** Univ. of North Carolina and Duke Univ. Med. Ctr. **(683.1)**
2:30 Gangliosides protect bowel in an infant model of necrotizing enterocolitis by suppressing pro-inflammatory signals of infection and hypoxia. **K.L. Schnabl, B. Larsen, J.E. Van Aerde, G. Lees, M. Evans and M.T. Clandinin.** Univ. of Alberta Hlth. Sci. Ctr. **(702.16)**
2:45 Whole-body nitric oxide synthesis is reduced in enterally-fed piglets receiving an arginine-deficient diet. **K.L. Urschel, M. Rafii, P.B. Pencharz and R.O. Ball.** Univ. of Alberta and Univ. of Toronto. **(354.1)**
3:00 Multi-functional approach for assessing diet-induced hypercholesterolemia on brain cholesterol metabolism in aged Brown Norway rats — a possible model for Alzheimer's disease. **N. Yamada, D. Kaur, A. Goja, M. Bataineh, R.H. Saab, S.M. Irtenkauf, S.E. Bowen, S.V. Gupta and P. Khosla.** Wayne State Univ. **(231.8)**
3:15 The influence of zinc status on Akt-p21 signaling axis in human prostate epithelial cells. **C-T. Han, N.W. Schoene and K.Y. Lei.** Univ. of Maryland College Park and USDA, Beltsville. **(855.22)**
3:30 Break.
3:45 Inflammation and delipidation induced by *trans*-10, *cis*-12 conjugated linoleic acid is linked to intracellular calcium accumulation in primary cultures of human adipocytes. **A. Kennedy, S. Chung, R. Hopkins, K. LaPoint and M. McIntosh.** Univ. of North Carolina at Greensboro and Wake Forest Univ. **(685.6)**
4:00 The loss of PPAR γ in immune cells abrogates the ability of abscisic acid to improve insulin sensitivity through a mechanism involving suppression of MCP-1 expression and macrophage infiltration into white adipose tissue. **A.J. Guri, R. Hontecillas, G. Ferrer, O. Casagran, U. Wankhade, A.M. Noble and J. Bassaganya-Riera.** Virginia Tech. **(115.6)**
4:15 Adipose-specific disruption of signal transducer and activator of transcription 3 increases body weight and adiposity. **E.R. Cernkovich, J. Deng, M.C. Bond and J.B. Harp.** Univ. of North Carolina at Chapel Hill . **(685.9)**
4:30 Selenium, but not lycopene or vitamin E, decreases growth of transplantable Dunning R3327-H prostate tumors. **B.L. Lindshield, N.A. Ford, K. Canene-Adams, M.A. Wallig and J.W. Erdman, Jr..** Univ. of Illinois at Urbana-Champaign. **(112.5)**
4:45 The impact of different ratios of omega-6 polyunsaturated fatty acids to eicosapentaenoic acid plus docosahexaenoic acid on atherosclerotic lesion formation and inflammatory factors in the LDL receptor knockout mouse. **S. Wang, D. Wu, N.R Matthan and A.H. Lichtenstein.** USDA at Tufts Univ. **(231.1)**
5:00 Elevated fat mass and leptin induce epididymal adipose tissue MCP-1 and MIP-1α gene expression with subsequent macrophage infiltration in diet-induced obese mice. **K.A. Cole, A.G. Smith, P.A. Sheridan and M.A. Beck.** Univ. of North Carolina at Chapel Hill. **(552.4)**

These papers are programmed a second time; refer to the bolded program number (in parenthesis) at the end of each presentation.

28. APPLICATION OF EMERGING TECHNOLOGIES TO COMPANION ANIMALS: UNDERSTANDING THE IMPACT OF MATERNAL NUTRITION AND OBESITY

Minisymposium

SAT. 2:00 PM—CONVENTION CENTER, ROOM 151A

CHAIRED: *K.S. SWANSON*

COCHAIRED: *D.L. HARMON*

2:00 Overview. **K.S. Swanson.** Univ. of Illinois at Urbana-Champaign.

2:15 **28.1** Identification of genes altered with maternal nutrition in growing puppies. **N.Z. Frantz, S.C. Zicker, K.G. Friesen, R.M. Yamka, X. Gao and S. Al-Murrani.** Hill's Pet Nutr. Inc., Topeka.

2:30 **28.2** Identification of genes altered with growth phase nutrition in growing puppies. **N.Z. Frantz, S.C. Zicker, K.G. Friesen, R.M. Yamka, X. Gao and S. Al-Murrani.** Hill's Pet Nutr. Inc., Topeka.

2:45 **28.3** Serum chemistry changes in weanling kittens fed high- or moderate-protein diets. **B.M. Vester, K.R. Belsito, K.J. Liu and K.S. Swanson.** Univ. of Illinois, Urbana and Natura Manufacturing Inc., Fremont, NE.

3:00 **28.4** Identification of genes related to obesity in dogs. **R.M. Yamka, K.G. Friesen, X. Gao and S. Al-Murrani.** Hill's Pet Nutr. Inc., Topeka.

3:15 **28.5** Effects of spaying on activity levels, food intake, and body composition of cats. **K.R. Belsito, B.M. Vester, T. Graves and K.S. Swanson.** Univ. of Illinois, Urbana.

3:30 **28.6** Green tea improves, at nutritional doses, insulin sensitivity and plasma lipids concentrations in obese dog by increasing PPARγ expression. **S. Serisier, V. Leray, W. Poudroux, T. Magot and P. Nguyen.** Natl. Vet. Sch. of Nantes and INSERM U539, Univ. Hosp., Nantes.

3:45 **28.7** Insulin target gene expression during weight loss in obese and insulin resistant dogs. **V. Leray, S. Serisier, S. Khoshniat and P. Nguyen.** Natl. Vet.Sch. of Nantes, France.

29. DIETARY PATTERNS AND DIET QUALITY IN RELATION TO OBESITY AND INSULIN RESISTANCE

Minisymposium

SAT. 2:00 PM—CONVENTION CENTER, ROOM 150A

CHAIRED: *K. WOSJE*

COCHAIRED: *P.K. NEWBY*

2:00 **29.1** An eighteen-month randomized trial of a low-glycemic index diet and weight change among Brazilian women. **R. Sichieri, A.S. Moura, V. Genelhu, W. Willett and F. Hu.** State Univ. of Rio de Janeiro and Harvard Sch. of Publ. Hlth.

2:15 **29.2** Patterns of beverage consumption associated with adolescent obesity in the U.S. **D.R. Keast, L.J. Weatherspoon and S.L. Hoerr.** Michigan State Univ.

2:30 **29.3** Mediterranean-style dietary pattern is associated with surrogate measures of insulin resistance in the Framingham Offspring Cohort. **M.E. Rumawas, N.M. McKeown, G. Rogers, J.T. Dwyer, J.M. Meigs and P.F. Jacques.** USDA at Tufts Univ. and Massachusetts Gen. Hosp.

2:45 **29.4** Longitudinal associations between diet quality and obesity in the United States, 1985 through 2005 findings from the CARDIA study. **D. Zamora, P. Gordon-Larsen, D.R. Jacobs and B.M. Popkin.** Univ. of North Carolina at Chapel Hill and –Univ. of Minnesota, Minneapolis.

3:00 **29.5** Associations between body mass index and food groups in the Multiethnic Cohort Study. **N.C. Howarth, S.P. Murphy, L.R. Wilkens and L.N. Kolonel.** Cancer Res. Ctr. of Hawaii, Honolulu.

3:15 **29.6** Eating pattern and dietary composition associations with insulin resistance markers. **M. Evezich, F. Solages, C. Gilhooly, G. Eldridge, T. Huang, M. Gehrke, S. Roberts, E. Saltzman, P. Fuss, S. Koutoubi, S. Murdoch and M. McCrory.** Sch. of Nutr. and Exercise Sci., Bastyr Univ., Tufts Univ., Boston and NICHD, NIH, Rockville.

3:30 **29.7** Macronutrient intake patterns and overweight in a population-based random sample in France. **N. Ahluwalia, J. Ferrieres, C. Simon, J. Dallongeville, P. Ducimetiere and J-B. Ruidavets.** INSERM U558, Toulouse, Univ. Sch. of Med., Louis Pasteur Univ., Strasbourg, Pasteur Inst INSERM U508, Lille and INSERM U258, Villefuif.

3:45 **29.8** Dynamic patterns of dietary intake and its association with dynamics of body mass index in urban low-income African American adolescents: the HEALTH-KIDS Study. **J. Li and Y. Wang.** Johns Hopkins Sch. of Publ. Hlth.

30. NUTRITIONAL STATUS ASSESSMENT

Minisymposium

SAT. 2:00 PM—CONVENTION CENTER, ROOM 152A

CHAIRED: *S. MOELLER*

COCHAIRED: *T. LAROWE*

2:00 **30.1** Development of risk factor screening protocol for college populations. **I.E. Lofgren, J.D. Burke, J.S. Morrell and R.A. Reilly.** Univ. of New Hampshire.

2:15 **30.2** Validity of bioelectrical impedance vector anlysis to assess total body water in women before, during pregnancy and postpartum. **H.C. Lukaski, C.B. Hall and W.A. Siders.** USDA, Grand Forks.

2:30 **30.3** Decline of anthropometric evaluation predicts a poor prognosis in elderly patients. **R. Tsutsumi and Y. Nakaya.** Univ. of Tokushima Grad. Sch., Japan.

2:45 **30.4** The amount of visceral adipose tissue and the ratio of visceral to subcutaneous adipose tissue is greater in adults with versus without spinal cord injury. **L.A. Edwards, J.M. Bugaresti and A.C. Buchholz.** Univ. of Guelph and Hamilton Hlth. Sci., Canada.

3:00 **30.5** Nutritional risk and quality of life in head and neck cancer patients receiving chemoradiation. **R.J. Hine, A. Sherman, E. Siegel, J.A. Penagaricano, A. Maddox and J.Y. Suen.** Univ. of Arkansas for Med. Sci.

31. EDUCATION FORUM

Forum

SAT. 3:00 PM—CONVENTION CENTER, ROOM 151B

CHAIRED: *R. EISENSTEIN*

3:00 Challenges and priorities in medical nutrition education. **M. Edwards.** Univ. of Texas Med. Sch. at Houston.

3:30 Integrating new concepts into graduate nutrition curricula: strategies for staying at the forefront while maintaining our nutrition identity. **P. Stover.** Cornell Univ.

4:00 Strategies and common themes in medical and graduate nutrition education. **S. Zeisel.** Univ. of North Carolina at Chapel Hill.

32. CHOOSING THE RIGHT NUTRITION-RELATED POSTDOCTORAL POSITION

Special Session

SAT. 4:15 PM—CONVENTION CENTER, ROOM 153

CHAIRED: *R. BAILEY*

Participants: **R. Bailey.** Penn State
K. Kordas. Cornell Univ.
M. Evans. NIDDK, NIH
A. Campa. Florida Intl. Univ.
C. Anderson. Johns Hopkins Bloomberg Sch. of Publ. Hlth.
P. Sokolove. Ofc. of Intramural Trng. and Educ., NIH

Pathology

33. AANP PRESIDENTIAL SYMPOSIUM: UPDATES IN NEURODEGENERATIVE DISEASES

Symposium

SAT. 8:30 AM—CONVENTION CENTER, ROOM 144A/B

CHAIRED: *B.J. CRAIN*

Neuropathology

8:30 Opening and welcoming remarks. **B.J. Crain.** Johns Hopkins Univ. Sch. of Med.

8:35 Alzheimer's disease and beyond: proteins and neurodegenerative disease. **B.J. Crain.** Johns Hopkins Univ. Sch. of Med.

8:55 Amyotrophic lateral sclerosis: genetics, models, and therapeutics. **D.L. Price.** Johns Hopkins Univ. Sch. of Med.

9:45 New insights into Parkinson's disease. **M.B. Feany.** Brigham and Women's Hosp.

10:35 Polyglutamine repeat expansion neurodegenerative disease. **K.H. Fischbeck.** NINDS, NIH.

11:30 Poster Viewing (See **Sessions 40 and 41** on pages 12-13).

1:00 Neuropathology Minisymposium: Neurodegenerative Disease I: FTD and ALS **(See Session 44 on pages 13-14.)**

2:30 Break.

2:45 Neuropathology Minisymposium: Neurodegenerative Disease II: Other **(See Session 48 on pages 15-16.)**

No Smoking

In Session Rooms, Poster or Exhibit Area

34. ENVIRONMENTAL AND HEREDITARY FACTORS IN LUNG PATHOBIOLOGY

Minisymposium

SAT. 8:30 AM—CONVENTION CENTER, ROOM 149A

CHAIRED: *T. MARIANI*

COCHAIRED: *J. VARANI*

Pulmonary Pathology

8:30 **34.1** Mean alveolar face length, a design-based measurement for emphysema. **D.M. Hyde, N.K. Tyler, L.F. Putney, W.J. Janssen, P.M. Henson and R.T. DeHoff.** Univ. of California-Davis, Natl. Jewish Med. and Res. Ctr. and Univ. of Florida.

8:45 **34.2** Disruption of the SERPINE2 gene results in COPD-related lung phenotypes. **S. Srisuma and T.J. Mariani.** Brigham and Women's Hosp.

9:00 **34.3** Molecular markers for quantitative and discrete COPD phenotypes. **T.J. Mariani, S. Bhattacharya, S. Srisuma, D.L. DeMeo, S.D. Shapiro, R. Bueno, E.K. Silverman and J.J. Reilly.** Harvard Med. Sch.

9:15 **34.4** L-Arginine attenuates acute lung injury following smoke inhalation. **P. Enkhbaatar, K. Murakami, Y-M. Yu, F. Lin, R. Cox, L. Traber, D. Herndon and D. Traber.** Univ. of Texas Med. Branch and Shriners Hosp. for Children, Massachusetts Gen. Hosp. and Shriners Burns Hosp.

9:30 **34.5** Chronic ethanol ingestion in mice enhances influenza a H1N1 pulmonary lesions. **D.K. Meyerholz, M. Edsen, R.A. Coleman, R.T. Cook and K.L. Legge.** Univ. of Iowa.

9:45 **34.6** Expression and activity of N-myristoyl transferase in normal and inflamed lungs. **B. Singh, R. Mohr and K. Janardhan.** Univ. of Saskatchewan.

10:00 **34.7** The effect of ozone treatment on mice survival after intratracheal *Klebsiella pneumoniae* infection: gender differences. **A. Mikerov, X. Gan, T.M. Umstead, D.S. Phelps and J. Floros.** Penn State Col. of Med.

10:15 **34.8** Quantitative proteomic profiles of BALF in wild type and SP-A KO mice after exposure to ozone. **R. Haque, T.M. Umstead, W.M. Freeman, D.S. Phelps and J. Floros.** Penn State Col. of Med.

10:30 **34.9** Matrix metalloproteinase-1 (interstitial collagenase) and matrix metalloproteinase-3 promote disease progression in acute lung injury. **J. Varani, K.C. Nerusu, R.L. Warner, N. Bhagavathula, K.J. Johnson and T.J. Standiford.** Univ. of Michigan.

10:45 **34.10** Fibroblast growth factor receptor deficiency results in abnormal type II pneumocyte gene expression and dysregulation of matrix production. **S. Srisuma, S. Bhattacharya, F. Tu, B. Starcher and T.J. Mariani.** Brigham and Women's Hosp. and Univ. of Texas Hlth. Ctr. at Tyler.

11:00 **34.11** Loss of a novel ciliary protein results in primary ciliary dyskinesia in mice. **L. Lee, D.R. Campagna, J.L. Pinkus, T.A. Wyatt, J.H. Sisson, J.A. Pavlik, G.S. Pinkus and M.D. Fleming.** Children's Hosp. and Brigham and Women's Hosp., Harvard Med. Sch. and Univ. of Nebraska Med. Ctr.

11:15 **34.12** Effects of interleukin-6 deletion in a murine model of ventilator-associated lung injury. **O.U. Gurkan, M. Shin, C. He and P.M. Becker.** Johns Hopkins Univ.

35. MECHANISMS OF CELL DEATH AND TISSUE REPAIR

Minisymposium

SAT. 8:30 AM—CONVENTION CENTER, ROOM 144C

CHAIRED: *S. COLGAN*

COCHAIRED: *M. MCMULLEN*

Cell Injury

8:30 **35.1** Increased susceptibility to myocardial ischemia and reperfusion injury in type I diabetes mellitus is mannose binding lectin dependent. **M.N. Busche, M.C. Walsh and G.L. Stahl.** Brigham and Women's Hosp., Harvard Med. Sch.

8:45 **35.2** Smad3 signaling critically regulates infarct healing. **M.J. Bujak, G. Ren, K.F. Chatila, M. Dobaczewski, A. Reddy, G. Taffet, X-F. Wang and N.G. Frangogiannis.** Baylor Col. of Med. and Duke Univ. Med. Ctr.

9:00 **35.3** Increased ischemic tissue survival through targeting thrombospondin-1. **J.S. Isenberg, M. Romeo, M. Abu-Asab, M. Tsokas, W.A. Frazier and D.D. Roberts.** NCI, NIH and Washington Univ. Sch. of Med.

9:15 **35.4** Ischemia/reperfusion-induced VEGF transcription in mouse skeletal muscle. **K. Tang, A.E. Knapp, P. Wagner and E. Breen.** UCSD.

9:30 **35.5** Changes in the liver mitochondrial proteome after ischemia/reperfusion. **T. Eismann, N. Huber, J. Blanchard, M. Wyder, K.D. Greis and A.B. Lentsch.** Univ. of Cincinnati.

9:45 **35.6** Increased synthesis and secretion of CRP in EC in hyperglycemia-role of NF-κB. **S. Devaraj, M.R. Dasu and I. Jialal.** Univ. of California-Davis Med. Ctr.

10:00 **35.7** Role of the mouse complement components C5 and C3a in a model of myocardial ischemia and reperfusion injury. **M.N. Busche, M.C. Walsh and G.L. Stahl.** Brigham and Women's Hosp., Harvard Med. Sch.

10:15 **35.8** Alternative death pathways in neural stem cells. **K.C. Walls, Y. Geng and K.A. Roth.** Univ. of Alabama at Birmingham.

10:30 **35.9** Differential p53 regulation of neural precursor cell death. **Y. Geng, R.S. Akhtar and K.A. Roth.** Univ. of Alabama at Birmingham.

10:45 **35.10** Serum amyloid A prevents mitochondrial dysfunction and delays constitutive neutrophil apoptosis. **D. El Kebir, L. Jozsef, T. Khreiss, W. Pan and J.G. Filep.** Maisonneuve-Rosemont Hosp., Univ. of Montreal.

11:00 **35.11** Overexpression of Egr-1 is associated with dilated cardiomyopathy and induces cardiac cell apoptosis. **T. Lucas, D. Kovatchki, D. Abraham, R. Schaefer, E. Hofer and S. Aharinejad.** Med. Univ. of Vienna.

11:15 **35.12** Apoptosis plays a key role in clonal selection of pathologic fibroblast sub-populations in systemic sclerosis. **S. Chabaud, I. Boufaied, M-P. Corriveau, T. Grodzicky, J-L. Senécal and V. Moulin.** Laval Univ., Canada and Notre Dame, CHUM, Montreal.

36. VASCULAR BIOLOGY: ANGIOGENESIS AND VASCULAR DEVELOPMENT

Minisymposium

(*Sponsored by:* NAVBO and ASIP)

SAT. 8:30 AM—CONVENTION CENTER, ROOM 140A

CHAIRED: *L. IRUELA-ARISPE*

COCHAIRED: *M. SIMONS*

Vascular Biology

8:30 **36.1** Fibroblasts potentiate blood vessel formation partially through secreted factor TIMP-1. **H. Liu and B. Lilly.** Med. Col. of Georgia.

8:45 **36.2** Nitrite enhances ischemia-induced angiogenesis by nitric oxide-dependent pathway. **D. Kumar, B. Branch, N. Arora, K. Kaushal, A. Senthilkumar, J. Glawe, J. Chidlow, Jr., X. Teng, M. Brown, D. Lefer, R. Patel and C. Kevil.** LSU Hlth. Sci. Ctr., Shreveport, Univ. of Alabama at Birmingham and Albert Einstein Col. of Med.

9:00 **36.3** Histone H2AX functions in hypoxia-driven neovascularisation. **T. Chavakis, A. Celeste, V. Orlova, A. Nussenzweig and M. Economopoulou.** NCI and NEI, NIH.

9:15 **36.4** Critical role of HIF1α and HIF2α in stretch-induced angiogenesis. **J.L. Doyle, M. Milkiewicz, T. Fudalewski and T.L. Haas.** York Univ., Canada and Pomeranian Univ., Poland.

9:30 **36.5** Coordinated regulation by Cdc42, integrin alpha2beta1, and membrane type-1 metalloproteinase-dependent signaling of capillary tube formation in 3D collagen matrices. **W. Koh, A. Sacharidou, K.E. Fisher and G.E. Davis.** Univ. of Missouri-Columbia.

9:45 **36.6** The role of p38 MAP kinase in the regulation of tube formation from endothelial cells in a three-dimensional cell culture system. **S. Rajan, J. Ye, F. Huang and Y. Guo.** Univ. of Southern Mississippi.

10:00 **36.7** AIP1 functions as an endogenous inhibitor of VEGFR2-dependent angiogenesis. **H. Zhang, Y. He, D. Luo and W. Min.** Yale Univ. .

10:15 **36.8** Dissecting TNFR2 signaling in arteriogenesis and angiogenesis. **Y. He, D. Luo and W. Min.** Yale Univ.

10:30 **36.9** A role for BRG1 in vascular development. **C. Griffin, J. Brennan and T. Magnuson.** Univ. of North Carolina at Chapel Hill.

10:45 **36.10** Dysregulated Notch signaling induces pathological arterialization of developing lymphatics in Down syndrome fetus. **J. Kang, N.M.S. van den Akker, B. Aguilar, W. Tang, D. Kafka, S. Lee, S. Ramu, S.K. Ganesan, H.H. Otu, J.M.G. van Vugt, J.W. Shin, G.P. Dotto, M. Detmar, A.C. Gittenberger-de Groot and Y-K. Hong.** USC, Leiden Univ. Med. Ctr.,The Netherlands, Beth Israel Deaconess Med. Ctr., Free Univ. Med. Ctr., Amsterdam, Swiss Fed. Inst. of Technol., Zurich and Lausanne Univ.

11:00 **36.11** The Notch ligand delta-like 4 negatively regulates endothelial tip cell formation and vessel branching. **S. Suchting, C. Freitas, R. del Toro, F. le Noble, R. Benedito, C. Breant, A. Duarte and A. Eichmann.** INSERM U36, Col. of France and CIISA, Fac. Of Vet. Med., Tech. Univ. of Lisbon.

11:15 **36.12** In vivo assessment of delta like-4 function in tumour development. **R.C.A. Sainson, J-L. Li, L. Harrington, W. Shi, E. Heikamp, R. Leek and A.L. Harris.** Univ. of Oxford.

37. VASCULAR BIOLOGY: ATHEROSCLEROSIS AND RESTENOSIS

Minisymposium

(*Sponsored by:* NAVBO and ASIP)

SAT. 8:30 AM—CONVENTION CENTER, ROOM 159

CHAIRED: *M.J. MULLIGAN-KEHOE*

COCHAIRED: *P. GALLAGHER*

Vascular Biology

8:30 **37.1** Plaque morphology in high versus low shear stress regions of human carotid stenosis. **B.S. Fyfe-Kirschner, P.J. Yim, J.R. Cebral and D.J. Foran.** UMDNJ-Robert Wood Johnson Med. Sch., New Brunswick and Piscataway and George Mason Univ.

8:45 **37.2** Native C-reactive protein does not increase formation of atherosclerotic lesions in apolipoprotein E-deficient mice. **M.A. Ortiz, M.J. Sosa, C.L. Walker, G.L. Campana, G. Boguslawski, C. Terry, H.L. DiCarlo and C.A. Labarrere.** Clarian Hlth. Partners, Indianapolis.

9:00 **37.3** Genetic deletion of LDL receptor impairs mouse macrophage ABCA1 expression and cholesterol efflux: a new SREBP-1 dependent mechanism. **J. Han, W. He, X. Zhou, Z. Huang, A.C. Nicholson, A.M. Gotto, Jr. and D.P. Hajjar.** Weill Med. Col. of Cornell Univ.

9:15 **37.4** The anti-angiogenic activity of rPAI-1_{23} inhibits angiogenic vasa vasorum and atherosclerotic plaque growth. **M.J. Mulligan-Kehoe, M.C. Drinane, J.I. Mollmark and M. Simons.** Dartmouth Med. Sch.

9:30 **37.5** γ-Glutamyltransferase activity in human atherosclerotic plaques: origin, prooxidant effects and potential roles in progression of disease. **A. Pompella, A. Paolicchi, M. Franzini, C. Passino and M. Emdin.** Univ. of Pisa Med. Sch. and Natl. Res. Council, Pisa.

9:45 **37.6** Oxidized phospholipids inhibit migration of mononuclear phagocytes. **M.I. Ostankovitch, M. Iwanicki, H. Hamandi and N. Leitinger.** Univ. of Virginia.

10:00 **37.7** Macrophage polarization induced by oxidized phospholipids. **A. Kadl and N. Leitinger.** Univ. of Virginia.

10:15 **37.8** Role of DAPK in atherosclerosis and inflammation. **E.K. Blue and P.J. Gallagher.** Indiana Univ. Sch. of Med.

10:30 **37.9** Testosterone attenuates neointima formation after coronary balloon angioplasty in male swine. **D.K. Bowles, J. Ivey, J. Casati and J.R. Turk.** Univ. of Missouri-Columbia.

10:45 **37.10** Improved efficacy of a nitric oxide-eluting therapy in diabetes. **S.S. Ahanchi, C.G. Pearce, M.R. Kapadia, Q. Jiang, J. Martinez, J.E. Saavedra, L.K. Keefer and M.R. Kibbe.** Northwestern Univ. and Mount Sinai Hosp., Chicago and NCI- and SAIC-Frederick.

11:00 **37.11** Primary and secondary capture of platelets in the femoral artery are mediated by P-selectin and PSGL-1 in vivo. **O.Ö. Braun, J. Slotta, D. Erlinge and H. Thorlacius.** Lund Univ. Hosp., Sweden and Univ. of Saarland, Germany.

11:15 **37.12** Catch bond mechanism suggested by GPIb alpha-vWF tether bonds. **L.A. Coburn, J.J. Miner, T. Yago, S.G. Eskin and L.V. McIntire.** Georgia Inst. of Technol. and Emory Univ. and Oklahoma Med. Res. Fndn.

38. 7TH ANNUAL GRADUATE PROGRAM DIRECTORS WORKSHOP

(*Sponsored by:* ASIP Education Committee)

SAT. 11:00 AM—RENAISSANCE HOTEL, ROOM 12

CHAIRED: *D.L. BICK*

Topics to be addressed:

- Funding graduate students: the training grant situation and interdisciplinary awards.
- Program identification and recruitment strategies: what's in a name?
- Mentoring guidelines: what is expected of faculty and student?

39. INTERNATIONAL SOCIETY FOR ANALYTICAL AND MOLECULAR MORPHOLOGY LECTURE

SAT. 11:30 AM—CONVENTION CENTER, ROOM 149B

11:30 Introduction. **L.E. DeBault.** Univ. of Oklahoma Hlth. Sci. Ctr.

11:35 Targeting and tracing antigens in living cells with fluroescent nanobodies. **H. Leonhardt.** Ludwig Maximilians Univ. Munich.

Visit The Exhibits

Sunday–Tuesday

April 29 – May 1

Exhibits Open 9:00 AM

40. AANP POSTER: NEURODEGENERATIVE DISEASE I: ALZHEIMER'S DISEASE

Poster Discussion

(*Sponsored by:* AANP and ASIP)

SAT. 11:30 AM—CONVENTION CENTER, ROOM 144A ALCOVE AREA

Neuropathology

P1 **40.1** Downregulation of myosin II-B by siRNA alters the subcellular localization of APP and increases Aβ deposition in N2a cells. **R. Ricciarelli, S. Massone, F. Argellati, C. Domenicotti, U.M. Marinari and M.A. Pronzato.** Univ. of Genoa.

P2 **40.2** Apolipoprotein E deficiency alters the uptake of radioactive vitamin E by different regions of the brain. **G.T. Vatasery, W.E. Smith and H.T. Quach.** VA Med. Ctr. and Univ. of Minnesota, Minneapolis.

P3 **40.3** MIP1-α expression is elevated in Alzheimer's vessels and is regulated by oxidative and lipid stress. **D. Tripathy, L. Thirumangalakudi and P. Grammas.** Texas Tech Hlth. Sci. Ctr.

P4 **40.4** A sensitive fluorimetric assay for detection of beta-secretase using a novel FRET peptide substrate. **X. Zhu, X. Han, Q. Lu, R. Meyer, X. Tong and V. Rakhmanova.** AnaSpec Inc., San Jose.

P5 **40.5** Differential nuclear and nucleolar hypertrophy of anterior and posterior cingulate neurons in asymptomatic subjects with AD pathology. **D. Iacono, R. O'Brien, S. Resnick, A. Zonderman, O. Pletnikova, G. Rudow, B. Crain and J. Troncoso.** Johns Hopkins Univ. and NIA, NIH, Baltimore.

P6 **40.6** Preferential 3-repeat tau staining of extracellular neurofibrillary tangles in Down syndrome with Alzheimer type changes. **K.M. Enstice, C.L. Hladik, P. Shang and C.L. White III.** Univ. of Texas Southwestern Med. Sch.

P7 **40.7** Biotinylated anti-Aβ antibody as a tool to diagnose pre-clinical stages of Alzheimer's disease. **S.M. Tucker, E. Oh, D. Borchelt and J. Troncoso.** Johns Hopkins Sch. of Med. and Univ. of Florida.

P8 **40.8** The H-2 receptor antagonist cimetidine blocks kainic acid toxicity in hippocampus as effectively as the NMDA receptor antagonist MK-801. **A.M. Rojiani, M. Ambegaoankar, M.N. Gordon, J.C.S. Breitner and D. Morgan.** Univ. of South Florida and VA Puget Sound Hlth. Care Syst., Seattle.

P9 **40.9** PACAP38 protects against sodium nitroprusside-induced apoptosis in rat cortical neurons. **A. Sanchez and P. Grammas.** Texas Tech Hlth. Sci. Ctr.

No Smoking

In Session Rooms, Poster or Exhibit Area

41. AANP POSTER: NEURODEGENERATIVE DISEASE II: NON-ALZHEIMER'S

Poster Discussion

(*Sponsored by:* AANP and ASIP)

SAT. 11:30 AM—CONVENTION CENTER, ROOM 144A ALCOVE AREA

Neuropathology

P10 **41.1** Coronin-1a: a novel microglial marker for use in paraffin embedded tissue. **Z. Ahmed, G. Shaw, V.P. Sharma, E. McGowan and D.W. Dickson.** Mayo Clin. Col. of Med., Univ. of Florida Col. of Med. and Univ. of Florida.

P11 **41.2** Frontotemporal lobar degeneration with upper motor neuron disease/primary lateral sclerosis. **K.A. Josephs and D.W. Dickson.** Mayo Clin., Rochester and Jacksonville.

P12 **41.3** Dual pathologies: utility of TAR DNA-binding protein 43 staining in patients with frontal and temporal lobe abnormalities and Alzheimer disease. **W.T. Hu, K.A. Josephs, D.W. Dickson, D.S. Knopman, B.F. Boeve, R.C. Petersen and J.E. Parisi.** Mayo Clin., Rochester and Jacksonville.

P13 **41.4** TDP43 immunocytochemistry is sensitive but not specific method to detect motor neuron-disease type neuronal inclusions. **S. Murayama, Y. Saito and H. Hatsuta.** Tokyo Metro. Geriatric Hosp.

P14 **41.5** Characterization of TDP43 protein in primary progressive aphasia and frontotemporal dementia with Alzheimer disease pathology. **E.H. Bigio, M. Mishra, N. Johnson, H. Mao and M. Mesulam.** Northwestern Univ., Chicago.

P15 **41.6** Frontotemporal lobar degeneration-motor neuron disease with minimal brain pathology and novel atypical PKC inclusions: a case report. **C.Y. Shao, T.C. Sacktor, E. Zimmerman and J. Qian.** SUNY Downstate Med. Ctr. and Albany Med. Col.

P16 **41.7** Progranulin is located in secretory granules and vesicles of neutrophils and macrophages by immunogold electron microscopy. **W-L. Lin, C. Zehr, J. Lewis and D.W. Dickson.** Mayo Clin. Col. of Med.

P17 **41.8** Clinical and neuropathologic findings in a case of posterior cortical atrophy. **M. Gearing, D.J. Brat, S.B. Hunter, D.S. Cooper, M. Tehrani and J.J. Lah.** Emory Univ. and Emory Univ. Hosp.

p18 **41.9** Motor and cognitive findings in incidental Lewy body disease. **T.G. Beach, D.J. Connor, L.I. Sue, J.N. Caviness, M.N. Sabbagh and C.C. Adler.** Sun Hlth. Res. Inst., Sun City, AZ and Mayo Clin., Scottsdale.

p19 **41.10** Phosphorylated tau accumulation in cortical and motor neurons in rats with high-aluminum diet for more than two years after birth as well as over generations. **K. Oyanagi, T. Hashimoto, E. Kawakami, K. Ogata, S. Takahama, T. Kihira, S. Tsuji and M. Yasui.** Tokyo Metro. Inst. for Neurosci., Natl. Inst. of Adv. Sci. and Technol, Tsukuba, Wakayama Med. Col., Univ. of Occup. and Envrn. Hlth. and Yasui Clin., Wakayama, Japan.

P20 **41.11** Molecular abnormalities in sporadic amyotrophic lateral sclerosis. **H. Perrin, F.F. Ding, E. Segalia, J.P. Vonsattel and S. de la Monte.** Brown Univ. and Columbia Univ.

P21 **41.12** Neuropathology in juvenile Huntington disease. **J.C. Hedreen.** Harvard Univ., McLean Hosp.

P22 **41.13** Intraneuronal polyglutamine aggregates are present in diverse CNS locations in Huntington disease. **E.S. Herndon, C.L. Hladik, P. Shang, D.K. Burns and C.L. White III.** Univ. of Texas Southwestern Med. Sch.

P23 **41.14** Basophilic inclusion body disease with novel ubiquitinated extracellular, cytoplasmic, and intranuclear inclusions. **E.H. Bigio, A. Engberg, M. Mishra, N. Johnson and M. Mesulam.** Northwestern Univ., Chicago.

P24 **41.15** Metabolism of 8-iso-PGF2alpha and conjugated linoleic acid in vivo and in X-adrenoleukodystrophy fibroblasts. **A. Petroni, C.A. Iannone, L. Cordeddu, E. Murru, G. Carta, M.P. Melis, S. Bergamini, M. Blasevich, R. Carissimi, M. O'Shea, E. De Santis and S. Banni.** Univ.of Milano, Univ. of Modena, Univ.of Cagliari, Loders Croklaan, The Netherlands and Univ. of Sassari, Italy.

P25 **41.16** ERK2 translocates to mitochondria during neurodegeneration and is associated with mitochondrial autophagy. **R.K. Dagda, J. Zhu, S.M. Kulich and C.T. Chu.** Univ. of Pittsburgh Sch. of Med. and VA Pittsburgh Healhcare Syst.

P26 **41.17** Neural-specific deletion of ERK2 results in frontal cortical neuropil thread formation and astrogliosis. **D.S. Heffron, I. Samuels, G.E. Landreth and J.W. Mandell.** Univ. of Virginia and Case Western Reserve Univ. Sch. Med.

P27 **41.18** PKC delta and NADPH oxidase in neuronal sensitivity to glycoxidative stress. **M. Nitti, A. Furfaro, N. Traverso, P. Odetti, D. Storace, D. Cottalasso, M.A. Pronzato, U.M. Marinari and C. Domenicotti.** Univ. of Genoa.

P28 **41.19** Association of the candidate genes on chromosome 7q with schizophrenia. **H.G. Kim, S.K. Lee, H.J. Kim, Y-Y. Cha, H-S. Yun, H-J. Kang, K.Y. Kim, S.V. Yim, J-H. Chung and K. Kwack.** Pochon CHA Univ. and Kyung Hee Univ., Republic of Korea.

42. NAVBO SYMPOSIUM: MECHANOSENSING AND SIGNAL TRANSDUCTION IN THE VESSEL WALL

Symposium

SAT. 12:30 PM—CONVENTION CENTER, ROOM 103A

CHAIRED: *M. FRIEDMAN*

COCHAIRED: *S. CHIEN*

Vascular Biology

12:30 The role of the glycocalyx in vascular mechanotransduction. **J.M. Tarbell.** CUNY.

1:00 The role of cytoskeleton in mechanotransduction. **M.P. Sheetz.** Columbia Univ.

1:30 Mechanotransduction and arterial remodeling. **B.L. Langille.** Toronto Gen. Res. Inst.

2:00 Stem cells feel their way — the surprising importance of tissue compliance in differentiation. **D.E. Discher.** Univ. of Pennsylvania.

43. ACVP SYMPOSIUM: EMERGING INFECTIOUS DISEASES

Symposium

(*Sponsored by:* ACVP and ASIP)

SAT. 1:00 PM—CONVENTION CENTER, ROOM 144C

CHAIRED: *W. CASTLEMAN*

COCHAIRED: *M.R. STAROST*

1:00 H5N1 high pathogenicity avian influenza biology and disease in birds. **D.E. Swayne.** USDA, Athens, GA.

1:45 Avian H5N1 influenza infection in cats and other carnivores. **T. Kuiken.** Erasmus Med. Ctr. Rotterdam.

2:15 Pathology of the reconstructed 1918 H1N1 influenza virus in mice and ferrets. **D.E. Swayne.** USDA, Athens, GA.

2:25 Emerging H3N8 influenza virus infection in dogs. **W.L. Castleman.** Univ. of Florida Col. of Vet. Med.

2:45 Integrated biosurveillance for zoonotic threats — how to stop using taxpayers as sentinels. **T.S. McNamara.** Gene Logic, Gaithersburg, MD.

3:10 The epidemiology and pathogenesis of West Nile virus infection of horses: not all virus strains were created equally. **N.J. MacLachlan.** Univ. of California-Davis Sch. of Vet. Med.

44. NEUROPATHOLOGY: NEURODEGENERATIVE DISEASE I: FTD AND ALS

Minisymposium

(*Sponsored by:* AANP and ASIP)

SAT. 1:00 PM—CONVENTION CENTER, ROOM 144A/B

CHAIRED: *E. BIGIO AND N. CAIRNS*

Neuropathology

1:00 **44.1** TDP-43 immunohistochemistry reveals extensive neuritic pathology in FTLD-U: a Midwest-Southwest Consortium for FTLD study. **K.J. Hatanpaa, E.H. Bigio, N.J. Cairns, J.A. Schneider, C. Foong, C.L. Hladik, P. Shang and C.L. White III.** Univ. of TexasSouthwestern Sch. of Med., Northwestern Univ. Feinberg Sch. of Med., Washington Univ. Sch. of Med. and Rush Univ. Sch. of Med.

1:15 **44.2** TDP-43 in the ubiquitin pathology of frontotemporal dementia with VCP gene mutations. **M.S. Forman, I.R. Mackenzie, N.J. Cairns, P.J. Boyer, W.R. Markesbery and M. Neumann.** Univ. of Pennsylvania, Univ. of British Columbia, Washington Univ., Univ. of Texas Southwestern Med. Ctr., Univ. of Kentucky and Ludwig Maximilians Univ. Munich.

1:30 **44.3** Detection of TDP-43 in Alzheimer's disease and hippocampal sclerosis. **C. Amador Ortiz, W-L. Lin, Z. Ahmed, C. Zehr and D.W. Dickson.** Mayo Clin. Col. of Med.

1:45 **44.4** Protein biomarkers of amyotrophic lateral sclerosis: mass spectrometry-based characterization of transthyretin. **C.L. Kolarcik, S.W. Darko and R. Bowser.** Univ. of Pittsburgh Sch. of Med.

2:00 **44.5** Aggregation of light neurofilament protein has direct neurotoxic effect on motor neurons. **W.W. Schlaepfer, H. Lin and J. Zhai.** Univ. of Pennsylvania Med. Sch.

2:15 **44.6** EAE-induced CNS inflammation accelerates ALS-like disease in the hmSOD transgenic rat model. **B.T. Harris, B.K. Kathryn, D.J. Graber, T.S. Davidson, K.P. Merkens, R.M. van Hoff and W.F. Hickey.** Dartmouth Med. Sch.

45. HIGHLIGHTS: GRADUATE STUDENT RESEARCH IN PATHOLOGY

Poster Discussion

(*Sponsored by:* ASIP Committee for Career Development, Women & Minorities)

SAT. 1:30 PM—CONVENTION CENTER, ROOM 147A

CHAIRED: *V.M. HOLLOWAY AND S.A. TOMLINS*

This session showcases a selection of oral and poster presentations by students, taken from the regular sessions. It provides a view of the research excellence among trainees in Pathology. Scout for a postdoctoral fellow and meet colleagues from other pathology research training programs.

1:30 Welcome and introduction. **V.M. Holloway and S.A. Tomlins.** Mayo Clin. Jacksonville and Univ. of Michigan.

Oral Presentations

1:35 Novel approach for specific delivery of cytolytic peptides (melittin) to cancer cells using molecularly targeted perfluorocarbon nanoparticles. **N.R. Soman, G.M. Lanza, P.H. Schlesinger and S.A. Wickline.** Washington Univ Sch. of Med. **(49.6)**

1:46 Demethylation of the E-cadherin promoter driven by hepatocytes allows for cell fate-determining signals in invasive breast cancer cells. **C.R. Shepard and A. Wells.** Univ. of Pittsburgh Sch. of Med. **(128.4)**

1:57 The polycomb group protein Bmi-1 collaborates with H-Ras to promote cellular proliferation and transformation of mammary epithelial cells in vitro, and development of poorly differentiated mammary tumors in vivo. **M.J. Hoenerhoff, S. Datta, G.P. Dimri, M.R. Simpson and J.E. Green.** NCI, NIH., Northwestern Univ. Feinberg Sch. of Med. and Robert H. Lurie Comprehen. Cancer Ctr., Evanston, IL . **(128.10)**

Poster Presentations

P2 Tuberculin anergy mediated by humoral immunity. **V.A. Romero, M. Fernandez-Viña, L. Encinales, I. Almeciga, C. Awad, V. Collazos, O.P. Clavijo, J. Zuñiga and E.J. Yunis.** Dana-Farber Cancer Inst., Harvard Med. Sch., Univ. of Texas M.D. Anderson Cancer Ctr. and Hosp. Santa Clara, Bogota and Hosp. La Tebaida, Armenia, Colombia. **(560.4)**

P4 Acetaldehyde-mediated neurotoxicity. **A. Spaisman, M. Tong, F-F. Ding, J. Wands and S. de la Monte.** Brown Univ. **(558.8)**

P6 Biosynthesis and plasma elimination of mature prostate-specific antigen and its activation peptide. **L. Voeghtly, I. Thogersen, C. Chu, T. Oury and J. Enghild.** Univ. of Pittsburgh and Univ. of Aarhus, Denmark. **(708.13)**

P8 Retinol inhibits PI3K/Akt activity but does not affect IRS-1 and PI3K levels in retinoic acid-resistant human colon cancer cells. **E.Y. Park, E. Wilder and M. Lane.** Univ. of Texas at Austin. **(554.24)**

P10 Oxidized phospholipids inhibit migration of mononuclear phagocytes. **M.I. Ostankovitch, M. Iwanicki, H. Hamandi and N. Leitinger.** Univ. of Virginia. **(37.6)**

P12 Ultrasound energy markedly and rapidly effects stem/progenitor cell labeling with nanoparticle beacons for molecular imaging and cell tracking. **K.C. Partlow, J.A. Brant, J.N. Marsh, J.A. Nolta, M.S. Hughes, G.M. Lanza and S.A. Wickline.** Washington Univ. Sch. of Med. **(553.3)**

Oral Presentations

2:38 Reduced Rap1 signaling contributes to prostate cancer progression. **V.M. Henderson, M. Ali-Seyed, T.L. Genetta, H. Kitayama, M.E. Csete and C.S. Moreno.** Emory Univ. and Kyoto Univ. Grad. Sch. of Med. **(128.6)**

2:49 Favored signaling pathways in short- and long-term survivors of pleural mesothelioma. **H.E. Kothmaier, F. Quehenberger, I. Halbwedl and H.H. Popper.** Med. Univ. of Graz, Austria. **(554.10)**

3:00 PDGFRα is an oncofetal target in human hepatocellular cancer. **P. Stock, D. Monga, A. Micsenyi, X. Tan, G. Zeng, N. Loizos and S.P.S. Monga.** Martin Luther Univ. Halle-Wittenberg, Univ. of Pittsburgh Sch. of Med. and Allegheny Gen. Hosp. and ImClone Syst. Inc., New York. **(867.17)**

Poster Presentations

P1 Regucalcin is a novel target of beta-catenin in liver. **K.N. Nejak-Bowen, G. Zeng and S.P.S. Monga.** Univ. of Pittsburgh Sch. of Med. **(867.7)**

P3 Initial studies to cure maple syrup urine disease in a mouse model. **K.J. Skvorak, H.S. Paul, W.J. Zinnanti, K.C. Cheng, C. Ferguson, X. Xiao, J.L. Xiao and G.E. Homanics.** Univ. of Pittsburgh, Biomed Res. & Technol. Inc., Wexford, PA, Penn State Col. of Med. and Univ. of North Carolina Sch. of Pharm. **(870.12)**

P5 +ACA BRCA1 promoter polymorphism occurs frequently in the general population. **K.K. White, D.R. Belloni, J. Booker, L.M. Silverman, G.J. Tsongalis, W.E. Highsmith and W.B. Coleman.** Univ. of North Carolina at Chapel Hill, Dartmouth-Hitchcock Med. Ctr., Sch. of Med., Univ. of Virginia Hlth. Syst. and Mayo Clin. Col. of Med. **(708.6)**

P7 Alterations of transforming growth factor-β pathway in cervical cancer. **J.D. Diaz-Chavez, R. Hernandez-Pando, P. Lambert and P. Gariglio.** CINVESTAV and INCMNSZ, Mexico City and Univ. of Wisconsin Sch. of Med. and Publ. Hlth. . **(49.8)**

P9 Tumor necrosis factor receptors play a role in the development of colitis-mediated colon cancer. **R. Stillie and A.W. Stadnyk.** Dalhousie Univ. and IWK Hlth. Ctr., Halifax, Canada. **(711.3)**

P11 Dual over-expression of IRS-1 and hepatitis B X antigen cause pre-malignant alterations in liver. **L. Longato, S. de la Monte, N. Nishiyama, M. Horimoto, S. Califano, J.E. Yeon, N. Monti and J. Wands.** Brown Univ. Med. Sch. and Univ. of Padua. **(867.16)**

3:41 Informal poster viewing and networking reception.

46. PPS SYMPOSIUM: THE NEW FRONTIERS IN PULMONARY HYPERTENSION RESEARCH

Symposium

(*Sponsored by:* Pulmonary Pathology Society *(a Division of ASIP))*

SAT. 2:00 PM—CONVENTION CENTER, ROOM 159

CHAIRED: *R.M. TUDER*

Pulmonary Pathology

2:00 Introduction to pulmonary vascular remodeling in pulmonary hypertension. **R.M. Tuder.** Johns Hopkins Univ. Sch. of Med.

2:15 The angiogenic niche in severe pulmonary hypertension. **N.F. Voelkel.** Univ. of Colorado Hlth. Sci. Ctr.

2:50 Dysregulated $CD133^{+}CD34^{+}$ endothelial progenitor cells in idiopathic pulmonary arterial hypertension. **S.C. Erzurum.** Cleveland Clin. Fndn.

3:25 Pathways converging on smooth muscle gene regulation offer new therapeutic possibilities for pulmonary hypertension. **M. Rabinovitch.** Stanford Univ. Sch. of Med.

3:55 Pathobiology of right ventricular dysfunction in pulmonary hypertension. **H.C. Champion.** Johns Hopkins Univ. Hosp.

4:10 Deconstructing pulmonary vascular disease: treatment of PAH with endothelial progenitor cells. **D.J. Stewart.** St. Michael's Hosp., Toronto.

4:45 Joint panel discussion.

47. NEUROPATHOLOGY: CNS TUMORS

Minisymposium

(*Sponsored by:* AANP and ASIP)

SAT. 2:00 PM—CONVENTION CENTER, ROOM 140A

CHAIRED: *A. PERRY*

COCHAIRED: *B. KLEINSCHMIDT-DEMASTERS*

Neuropathology

2:00 **47.1** Panel review of a set of anaplastic oligodendroglioma of EORTC trial 26951: interobserver variation, correlation with 1p/19q loss and clinical outcome. **J.M. Kros, T. Gorlia, M. Kouwenhoven, P. Collins, D. Figarella-Branger, F. Giangaspero, C. Giannini, K. Mohktari, S.J. Mork, A. Paetau, G. Reifenberger and M.J. van den Bent.** Erasmus Med. Ctr., Rotterdam and EORTC, Brussels.

2:15 **47.2** Clinical significance of prospective molecular genetic analysis of glial neoplasms: the Washington University FISH laboratory experience. **C.R. Miller, T. Haddix, C.P. Dunham and A. Perry.** Washington Univ. Sch. of Med. and Stanford Univ. Sch. of Med.

2:30 **47.3** Giant cell glioblastoma: predictive and prognostic factors. **J.A. Maguire, B. Thiessen, W. Moore, M. Miller, E. Leung and D. Horsman.** Vancouver Gen. Hosp. and BCCA Vancouver Ctr.

2:45 **47.4** Intravascular thrombosis is more frequent in glioblastoma than other central nervous system malignancies. **M. Tehrani, T.M. Friedman, J.J. Olson and D.J. Brat.** Emory Univ. Sch. of Med.

3:00 **47.5** Migration of glioblastoma cells indicates invasion is mediated by a network of proteins stimulated by HGF/Met and suppressed by radicicol. **M.E. Beckner, N.R. Agostino and I.F. Pollack.** Univ. of Pittsburgh.

3:15 **47.6** Differential expression of glyoxalase in human brain tumors. **R. Schober, M. Buchold, A. Hintersdorf, J. Meixensberger and G. Birkenmeier.** Univ. of Leipzig, Germany.

3:30 **47.7** Malignant cranial nerve sheath tumor: a clinicopathologic study of 13 cases. **S. Erdogan, B.W. Scheithauer, F.J. Rodriguez, P.C. Burger, J.M. Woodruff, T. Hirose and R. Spinner.** Mayo Clin., Johns Hopkins Med. Insts., Mem. Sloan-Kettering Cancer Ctr. and Saitama Med. Sch., Japan.

3:45 **47.8** Mutations of the p53 tumor suppressor gene contribute to malignant peripheral nerve sheath tumor formation in neuregulin-1 overexpressing transgenic mice. **S.A.J. Kazmi and S.L. Carroll.** Univ. of Alabama at Birmingham.

4:00 **47.9** Molecular and gene array analyses of rare pediatric mesenchymal tumors: malignant intracranial ectomesenchymoma compared to rhabdomyosarcoma, malignant peripheral nerve sheath tumor, and Ewing sarcoma. **B.K. Kleinschmidt-DeMasters, M.A. Lovell, A.M. Donson, C.C. Wilkinson, S.O. Addo-Yobo, K.O. Lillehei and N.K. Foreman.** Univ. of Colorado at Denver and Hlth. Sci. Ctr. and Children's Hosp.

4:15 **47.10** A nanoemulsion of an anti-oxidant synergy formulation reduces tumor growth rate in neuroblastoma-bearing nude mice. **F. Kuo, T. Kotyla, T. Wilson, L. Kifle, T. Panagiotou, I. Gruverman, J-B. Tagne, T. Shea and R. Nicolosi.** Univ. of Massachusetts Lowell and Microfluidics Corp., Newton, MA.

4:30 **47.11** The frequency of IGH-BCL6 translocations in PCNSL is less than that seen in systemic DLBCL, suggesting a distinct pathogenesis. **C. Giannini, F.M. Cady, M.E. Law, A.B. Porter, B.P. O'Neill, E. Remstein and A. Dogan.** Mayo Clin. Col. of Med. .

4:45 **47.12** CNS T-cell lymphoma: an underrecognized entity? **M. Dulai, C. Park, L.T. Smyth, M. Desai and H. Vogel.** Stanford Univ. Med. Ctr. and Kaiser Permanente Med. Ctr.

48. NEUROPATHOLOGY: NEURODEGENERATIVE DISEASE II: OTHER

Minisymposium

(*Sponsored by:* AANP and ASIP)

SAT. 2:45 PM—CONVENTION CENTER, ROOM 144A/B

CHAIRED: *T. MONTINE & D. DICKSON*

Neuropathology

2:45 **48.1** Proteomics identification of novel proteins involved in Lewy body progression.7 **J. Zhang.** Univ. of Washington.

3:00 **48.2** Mechanisms of slow axonal transport of α-synuclein. **S. Roy, M.J. Winton, M.M. Black, J.Q. Trojanowski and V.M-Y. Lee.** Univ. of Pennsylvania and Temple Univ. Hosp.

3:15 **48.3** α-Synuclein in activated microglias during infarct-induced Wallerian degeneration. **J-Q. Lu, H.K. Lee, A.P. Mitha, G. Neumayer and M.D. Nguyen.** Univ. of Calgary, Canada.

3:30 **48.4** The high-affinity peripheral benzodiazepine receptor ligand [11C]DAA1106 can be used to image microglia in animal models of Pparkinson's disease and neuroinflammation in vivo using PET. **S. Venneti, B.J. Lopresti, G. Wang, S. Slagel, N.S. Mason, C. Mathis, M. Fischer, N.J. Larsen, A.D. Mortimer, T.G. Hastings, A.D. Smith, M.J. Zigmond, T. Suhara, M. Higuchi and C.A. Wiley.** Univ. of Pittsburgh and Natl. Inst. of Radiol. Sci., Chiba, Japan.

3:45 **48.5** Autopsy imaging of 3 Tesla MRI of neurodegenerative disorders: neuropathologic-neuroradiologic correlations. **M. Takao, E. Ikeda, K. Tsuchiya, Y. Yoshida and B. Mihara.** Mihara Mem. Hosp., Isesaki, Sch. of Med., Keio Univ., Tokyo Metro. Matsuzawa Hosp. and Spec. Elderly Nursing Home AMICI, Isesaki, Japan.

4:00 **48.6** Tauopathy in human and experimental variant Creutzfeldt-Jakob disease. **F. Tagliavini, M. Mangieri, R. Capobianco, J-J. Hauw, S. Haik, L. Limido, P. Fociani, O. Bugiani and G. Giaccone.** Neurol Inst. Carlo Besta, Milan, Salpêtrière Hosp., Paris and Univ. of Milan, Hosp. Luigi Sacco.

4:15 **48.7** The first de novo mutation in the neuroserpin gene. **C. Godfraind, M. Coutelier, S. Andries, G. van Rijckevorsel, F. Scaravilli and M. Vikkula.** Catholic Univ. of Louvain, Belgium and Inst. of Neurol., London.

49. NOVEL THERAPEUTIC ADVANCES IN CANCER: A PEEK INTO THE FUTURE

Minisymposium

SAT. 2:00 PM—CONVENTION CENTER, ROOM 149B

CHAIRED: *K. BERNSTEIN*

COCHAIRED: *S. BARSKY*

Neoplasia

2:00 **49.1** Myopodin-mediated suppression of prostate cancer cell migration involves interaction with zyxin. **J. Luo and Y.Y. Yu.** Univ. of Pittsburgh.

2:15 **49.2** Perlecan heparan-sulfate fine structure and SHH signaling in advanced prostate cancer. **B. Ferguson, M. Schlicht, A. Migdal, P. Shaw, M.W. Datta and S. Datta.** Texas A&M Univ. and Emory Univ.

2:30 **49.3** Docosahexaenoic acid induces proteasome-dependent degradation of β-catenin and apoptosis in human colorectal cancer cells not expressing COX-2. **G. Calviello, F. Resci, S. Serini, E. Piccioni, A. Toesca, G. Monego, F.O. Ranelletti and P. Palozza.** Catholic Univ., Rome.

2:45 **49.4** siRNA-mediated β-catenin knockdown in human hepatoma cells results in their decreased growth and survival. **G. Zeng, U. Apte, B. Cieply and S.P.S. Monga.** Univ. of Pittsburgh Sch. of Med.

3:00 **49.5** Treatment of early and intermediate stages of colorectal cancer with EGF-receptor related protein. **E.M. Schmelz, H. Xu, J. Du, F.H. Sarkar, A. Rishi and A.P. Majumdar.** Wayne State Univ., VA Med. Ctr. and Karmanos Cancer Inst., Detroit.

3:15 **49.6** Novel approach for specific delivery of cytolytic peptides (melittin) to cancer cells using molecularly targeted perfluorocarbon nanoparticles. **N.R. Soman, G.M. Lanza, P.H. Schlesinger and S.A. Wickline.** Washington Univ Sch. of Med.

3:30 **49.7** Ubiquitination of the disc defines TRAIL-induced apoptotic and nonapoptotic signals: implications in cancer therapies. **C. Hao, M.C.L. Tse and A. Bellail.** Emory Univ.

3:45 **49.8** Alterations of transforming growth factor-β pathway in cervical cancer. **J.D. Diaz-Chavez, R. Hernandez-Pando, P. Lambert and P. Gariglio.** CINVESTAV and INCMNSZ, Mexico City and Univ. of Wisconsin Sch. of Med. and Publ. Hlth. .

4:00 **49.9** Hepatoma-derived growth factor is essential for breast tumorigenesis and downregulated by estrogen receptor. **J. Yang, A. Pedram, P. Dulloor and A.D. Everett.** Johns Hopkins Univ.

4:15 **49.10** Targeting upregulated Notch signaling in inflammatory breast cancer. **S.H. Barsky, Y. Xiao and Y. Ye.** Ohio State Univ. Col. of Med.

4:30 **49.11** CD133 postive cellular population in human melanoma. **C.A.M. La Porta, E. Monzani, F. Facchetti, E. Galmozzi, E. Corsini, A. Benetti, C. Cavazzin, A. Gritti, A. Piccinini, M. Santinami, E. Parati and G. Alessandri.** Univ. of Milan, Inst. Neurol Besta, Milan Dept. of Anat. Pathol., Brescia, Inst. for Stem Cell Res., Milan and Natl. Inst. Oo Tumors, Milan.

4:45 **49.12** Mice with enhanced macrophage angiotensin converting enzyme are resistant to melanoma. **K.E. Bernstein, X.Z. Shen, P. Li, S. Fuchs and H.D. Xiao.** Emory Univ.

50. NAVBO SYMPOSIUM: PROTEOGENOMIC MAPPING OF VASCULAR PHENOTYPES IN HEALTH AND DISEASE

Symposium

SAT. 3:00 PM—CONVENTION CENTER, ROOM 103A

CHAIRED: *J.E. SCHNITZER*

Vascular Biology

3:00 Targeting the bone marrow compartment blocks angiogenesis-mediated tumor growth. **V. Mittal.** Cold Spring Harbor Lab., NY.

3:30 Proteomic mapping of endothelial cell surface and its caveolae in organs and tumors. **J.E. Schnitzer.** Sidney Kimmel Cancer Ctr., San Diego.

4:00 Stage-specific gene expression during angiogenic sprouting and tube formation. **C.C. Hughes.** Univ. of California-Irvine.

51. KEYNOTE MOORE LECTURE

SAT. 5:00 PM—CONVENTION CENTER, ROOM 144

Neuropathology

5:00 Introduction. **P.M. Howley.** Harvard Med. Sch.

5:05 New strategies for defining critical neuropathology in neurodegenerative disorders. **F.E. Bloom.** The Scripps Res. Inst.

52. NAVBO HIGHLIGHTS TRAINEE RESEARCH AND WELCOME RECEPTION

Poster Discussion

SAT. 6:15 PM—CONVENTION CENTER, ROOM 140B

Vascular Biology

NAVBO trainees will present their posters in addition to their regularly scheduled presentation. This will give their work added exposure and give them the opportunity to discuss their work with senior investigators. The Junior Investigator Award finalists will also present their posters, judges will review their posters at this session; the award will be announced at the Membership Business Meeting. This poster session is held in conjunction with our Welcome Reception.

53. AANP DIAGNOSTIC SLIDE SESSION

Special Session

SAT. 8:00 PM—RENAISSANCE HOTEL, RENAISSANCE WEST

CHAIRED: *E.T. HEDLEY-WHYTE*

Neuropathology

Ten unknown cases will be presented for diagnosis and discussion by the audience. The microscopic slides and protocols will be available at the meeting for review before the session . Audience participation is essential for this session!

Pharmacology

54. ASPET 3RD GPCR COLLOQUIUM — DAY 2

Satellite Session

Separate, Pre-registration Required

(*Sponsored by:* ASPET's Division for Molecular Pharmacology)

(Supported by educational grants from AstraZeneca, Johnson & Johnson, Merck Research, Wyeth Research, and ASPET's Division for Neuropharmacology, with support for the Keynote Lecture by ASPET's Division for Molecular Pharmacology)

SAT. 7:30 AM—CONVENTION CENTER, ROOM 204 A/B/C

CHAIRED: *K.A. NEVE*

COCHAIRED: *O. CIVELLI*

SEPARATE, PRE-REGISTRATION REQUIRED

7:30 Continental breakfast.
8:10 Introduction. **O. Civelli.** Univ. of California-Irvine.
8:20 Kisspeptin and GPR54 in the regulation of puberty and reproduction. **U.B. Kaiser.** Brigham and Women's Hosp., Harvard Med. Sch.
9:00 GPCRs in arousal and anxiety. **R.K. Reinscheid.** Univ. of California-Irvine.
9:40 Talk from selected abstracts.
10:10 Break and posters.
10:40 The role of GPR30 in estrogen signaling. **E.R. Prossnitz.** Univ. of New Mexico Hlth. Sci. Ctr.
11:20 Therapeutic benefits of inverse agonism at cannabinoid receptors. **G. Le Fur.** Sanofi-Aventis, Paris.
12:00 Lunch.
1:30 Novel aspects of the melanocortin receptors. **R.D. Cone.** Oregon Hlth. & Sci. Univ.
2:10 Leucocyte chemoattractants receptors: new molecules and new concepts. **M. Parmentier.** Free Univ. of Brussels.
2:50 Break and posters.
3:20 **Keynote Lecture**: The function and regulation of G protein-coupled glutamate receptors in the neural network. **S. Nakanishi.** Osaka Biosci. Inst.
4:20 Conclusion.

55. BEHAVIORAL PHARMACOLOGY SOCIETY MEETING — DAY 2

Satellite Session

SAT. 8:00 AM - 6:00 PM—CONVENTION CENTER, ROOM 201

CHAIRED: *G.R. WENGER*

SEPARATE, PRE-REGISTRATION REQUIRED

56. 2007 TEACHING INSTITUTE: INTEGRATED STRATEGIES IN PHARMACOLOGY EDUCATION: SIMULATION, CASE- AND TEAM-BASED APPROACHES

SAT. 12:30 PM—CONVENTION CENTER, ROOM 142

CHAIRED: *L.M. CRESPO*

COCHAIRED: *J.E. WARNICK*

Education Session

12:30 Overview: multiple approaches to the teaching of pharmacology. **L.M. Crespo and J.E. Warnick.** Univ. of South Florida and Univ. of Maryland Sch. of Med.
12:40 Lecture-based approach to pulmonary pharmacology. **J.E. Warnick.** Univ. of Maryland Sch. of Med.
1:10 Case-based approaches in pulmonary disease. **L.M. Crespo.** Univ. of South Florida.
1:40 Simulators in acute asthma case (albuterol and steroids). **J.L. Szarek.** Ross Univ. Sch. of Med.
2:10 Team-based approach to pulmonary pharmacology. **R.J. Theobald, Jr..** A.T. Still Univ. of the Hlth. Sci.
2:40 Panel discussion.

57. DIVERSITY COMMITTEE WORKSHOP: MENTORING: HOW TO FIND A GOOD MENTOR AND HOW TO BE A GOOD MENTOR

SAT. 1:00 PM—CONVENTION CENTER, ROOM 143C

CHAIRED: *M.I. DAVILA-GARCIA*

COCHAIRED: *G.E. TORRES*

Career Session

1:00 Welcome. **G.E. Torres.** Univ. of Pittsburgh Sch. of Med.
1:05 Introduction. **M.I. Davila-Garcia.** Howard Univ. Col. of Med.
1:15 How to find a good mentor. **H.G. Adams.** H.G. Adams & Assoc., Inc.
2:00 How to be a good mentor. **J.G. Townsel.** Meharry Med. Col.
2:45 Panel discussion.
3:05 Conclusions.
3:15 End of session.

58. GRADUATE STUDENT-POSTDOCTORAL COLLOQUIUM: PHARMA PHAIR

SAT. 3:15 PM—CONVENTION CENTER, ROOM 143A/B

CHAIRED: *S.W. WATTS*

COCHAIRED: *W.C. PROZIALECK*

Career Session

Trainees will first hear, then interact with professionals from different career paths to view the wide variety of options open to them after their formal training. Each presentation will be five minutes.

3:15 Introduction: **S.W. Watts.** Michigan State Univ.
Academician: **B.S. Beckman.** Tulane Univ. Sch. of Med.
Biotech: **M. Babich.** ImmvaRx, Auburn, CA.
Consultant: **M.T. Rock.** Chirality, LLC., Oak Park, IL.
Legal: **B.E. Taylor.** Venable LLP,Washington, DC.
NIH: **L.R. Pohl.** NHLBI, NIH.
Pharmaceutical Industry: **R.M. Fryer.** Abbott Labs.
Pharmacy: **T.J. Maher.** Massachusetts Col. of Pharm.
Public Affairs: **J.S. Bernstein.** ASPET.
Science Writing: **J.U. Adams.** Freelance Writer, Albany, NY.
Scientific Officer: **C.K. Carrico.** ASPET.
Teacher: **W.C. Prozialeck.** Midwestern Univ., IL.
5:30 End of session.

59. ASPET BUSINESS MEETING AND AWARDS RECEPTION

SAT. 6:00 PM—CONVENTION CENTER, BALLROOM A

Physiology

60. PHYSIOLOGY IN PERSPECTIVE — THE WALTER B. CANNON MEMORIAL AWARD

Lecture

(Supported by an educational grant from The Grass Foundation)

SAT. 5:45 PM—CONVENTION CENTER, BALLROOM B

Ion Channels

Speaker: **F.M. Ashcroft.** Univ. of Oxford.

Title: ATP-Sensitive K-Channels and Disease: From Molecule to Malady

61. EMERGING TECHNIQUES FOR ION CHANNEL STUDIES

Workshop

SAT. 12:30 PM—CONVENTION CENTER, ROOM 146A

CHAIRED: *T-C. HWANG AND D. KRAFTE*

Education Session

Ion Channels

12:30 Multiple applications of automated electrophysiology platforms in drug discovery. **J. McGivern.** Amgen Inc.
1:00 Optical patch-clamping: high-throughput single channel recording by imaging Ca^{2+} flux through individual voltage- and ligand-gated channels. **I. Parker.** Univ. of California-Irvine.
1:30 Patch-clamp amplifier on a chip technology. **K. Klemic.** Yale Univ.
2:00 FRET studies on ClC chloride channels. **T-Y. Chen.** Univ. of California-Davis.

62. CHRONIC INSTRUMENTATION IN CONSCIOUS SMALL ANIMALS

Workshop

SAT. 3:00 PM—CONVENTION CENTER, ROOM 146A

CHAIRED: *J.R. HAYWOOD AND S. MULRONEY*

Education Session

The goal of this workshop is to provide new and established investigators with technical and practical information to chronically instrument small animals. The increased awareness for understanding physiological and pharmacological responses in awake, behaving animals has grown with the development of new technologies. In this workshop, presentations will focus on technical aspects of surgical preparation, potential problems, and possible applications of various techniques. After a general overview, presentations will be given on the use of telemetry (Andrew King), fluid sampling (Gregory Fink), brain cannulation and sampling (J.R. Haywood and Susan Mulroney), and other variables such as nerve recording, cardiac output, electromyogram, and electroencephalograms (Osborn). CDs will be available with useful information for various techniques. A question/answer period will complete the program.

3:00 Introduction.
3:10 Telemetry. **A.J. King.** Michigan State Univ.
3:30 Fluid sampling. **G.D. Fink.** Michigan State Univ.
3:50 Brain cannulation and sampling. **J. Haywood and S. Mulroney.** Michigan State Univ.
4:10 Nerve recording, cardiac output, EMG. **J.R. Osborn.** Univ. of Minnesota.
4:30 Questions and answers.

63. REFRESHER COURSE IN GI PHYSIOLOGY

Refresher Course

(*Sponsored by:* APS Education Committee)

SAT. 8:00 AM—CONVENTION CENTER, ROOM 145B

CHAIRED: *P.K. RANGACHARI AND L.B. WILSON*

Education Session

8:00 Modeling GI disease: translating symptoms into mechanisms. **S.M. Collins.** McMaster Univ., Canada.
8:30 Discussion.
8:40 Non-neural regulation of motility. **K.M. Sanders.** Univ. of Nevada Sch. of Med.
9:10 Discussion.
9:20 Enteric neural circuits: how they work and what happens when they don't. **G.M. Mawe.** Univ. of Vermont.
9:50 Discussion.
10:00 New ways of thinking about (and teaching about) intestinal epithelial function. **K.E. Barrett.** UCSD Med. Sch. of Med.
10:30 Discussion.
10:40 The past as epilogue: teaching physiology circa 1907. **P.K. Rangachari.** McMaster Univ., Canada.
10:50 Discussion.

64. MAKING THE CASE FOR FEDERALLY-FUNDED RESEARCH: COMMUNICATING WITH CONGRESS

Symposium

(*Sponsored by:* APS Communications)

SAT. 1:00 PM—CONVENTION CENTER, ROOM 155

CHAIRED: *F.L. BELLONI*

Education Session

1:00 Introductory remarks. **F.L. Belloni.**
1:05 TBA. **J. Retzlaff.** FASEB.
1:25 TBA. **S. England.** Univ. of Iowa.
1:45 TBA. **W.T. Talman.** Univ. of Iowa.
2:05 TBA. **S Propst.** Research!America.
2:25 Questions and discussion**.**

65. MCS PRESIDENT'S SYMPOSIUM: FRONTIERS OF MICROCIRCULATION

Symposium

(*Sponsored by:* The Microcirculatory Society)

SAT. 3:00 PM—CONVENTION CENTER, ROOM 146B

CHAIRED: *T.W. SECOMB*

3:00 Mechanisms of renal blood flow autoregulation. **E. Inscho.** Med. Col. of Georgia.
3:30 Blood-brain interface: mechanisms of vascular regulation with neural activity. **T. Woolsey.** Washington Univ.
4:00 Adaptive responses of the microcirculation and immune system to environmental challenges. **S.J. Mentzer.** Brigham and Women's Hosp.
4:30 Relationship between tumor hypoxia and acidosis: new insights into the Warburg effect. **M.W. Dewhirst.** Duke Univ.

66. HUMAN SUBJECT RESEARCH ETHICS: ISSUES FOR GOING FROM BENCH TO BEDSIDE

Symposium

(*Sponsored by:* APS Public Affairs Committee)

SAT. 1:15 PM—CONVENTION CENTER, ROOM 147B

CHAIRED: *M. PORTMAN AND V. MILLER*

Education Session

3:15 An ethical roadmap to translational research. **L.F. Ross.** Univ. of Chicago.
3:45 TBA. **K. Massey.** Pfizer Global R&D.
4:15 TBA. **T.F. Bumol.** Eli Lilly and Co.
4:45 Creating a marketable product through translational research. **D.L. Wynes.** Emory Univ.

67. AFMR TRANSLATIONAL RESEARCH DEVELOPMENT WORKSHOP

Workshop

(*Sponsored by:* The American Federation for Medical Research)

SAT. 4:00 PM—CONVENTION CENTER, ROOM 154A

CHAIRED: *D. ZUCKER*

68. APS WATER AND ELECTROLYTE HOMEOSTASIS SECTION TRAINEE FINALIST AWARDS SYMPOSIUM

Symposium

(Supported by an educational grant from Data Sciences, Inc.)

(*Sponsored by:* APS Water & Electrolyte Homeostasis Section)

SAT. 4:00 PM—CONVENTION CENTER, ROOM 154B

CHAIRED: *M. BRANDS AND J. POLLOCK*

4:00 Introduction.

4:15 Angiotensin-(1-7) increases water intake and produces diuresis in association with downregulation of aquaporin-1 during pregnancy in rats. **J. Joyner.** Wake Forest Univ. Med. Ctr. **(906.2)**

4:25 ROS scavenging is independent of renal perfusion pressure in angiotensin II/L-NAME hypertensive rats. **A.J. Polichnowski.** Med. Col. of Wisconsin. **(754.9)**

4:35 The role of angiotensin II type I receptor activation in mediating TNF alpha-induced hypertension in the pregnant rat. **B. LaMarca.** Univ. of Mississippi Med. Ctr. **(618.11)**

4:45 Estradiol has protective effects on female growth restricted offspring in a model of programmed hypertension. **N.B. Ojeda.** Univ. of Mississippi Med. Ctr. **(972.4)**

4:55 Renal medullary infusion of CoPP prevents angiotensin-II-dependent hypertension in mice. **T. Vera.** Univ. of Mississippi Med. Ctr. **(754.10)**

5:15 Dietary fat increases renal injury in SHR in the absence of changes in insulin sensitivity or blood pressure. **S.F. Knight, S.** Med. Col. of Georgia. **(892.5)**

69. MCS BUSINESS MEETING AND SOCIAL

SAT. 5:30 PM—CONVENTION CENTER, ROOM 146B

SUNDAY, APRIL 29

Anatomy

70. CELL MICROENVIRONMENT IN DEVELOPMENT AND CANCER

Plenary

SUN. 8:00 AM—CONVENTION CENTER, ROOM 103 A/B

CHAIRED: *M. HENDRIX*

8:00 **70.1** The convergence of embryonic and cancer signaling pathways: role in tumor cell plasticity. **M.J.C. Hendrix.** Northwestern Univ., Chicago.
9:00 Break.
9:30 Introduction.
9:35 **70.2** Environmentally induced changes in adult stem cell function. **G.C. Schatteman.** Univ. of Iowa.
10:00 Force, Dimensionality and Tissue Morphogenesis and Malignancy. **V. Weaver.** Univ. of Pennsylvania.
10:25 **70.3** Local microenvironments versus tissue compartments in embryos — which cells are really moving and where are they going? **C.D. Little, B.J. Rongish, A. Czirók, E.A. Zamir and C. Cui.** Univ. of Kansas Med. Ctr. and Eötvös Loránd Univ., Hungary.
10:50 **70.4** Solid tumor metastases to bone: role of the bone microenvironment. **T.A. Guise.** Univ. of Virginia.
11:15 Discussion.

71. SCHOLARSHIP IN THE 21ST CENTURY: CVs, PORTFOLIOS AND PROMOTIONS

Symposium

SUN. 2:30 PM—CONVENTION CENTER, ROOM 103A

CHAIRED: *J.T. LAITMAN*

2:30 Introduction.
2:35 **71.1** The nature of scholarship: what it is, what it is not. **K.H. Albertine.** Univ. of Utah.
3:00 **71.2** Perfecting your portfolio: preparing for promotion. **S. Rose.** Mount Sinai Sch. of Med.
3:25 **71.3** Promotion and our curriculum vitae: our first, last and best chance to make an impression. **J.T. Laitman.** Mount Sinai Sch. of Med.
3:50 Discussion.

72. DISEASE CONNECTIONS IN DEVELOPMENT

Symposium

SUN. 2:30 PM—CONVENTION CENTER, ROOM 103B

CHAIRED: *H. SIVE*

2:30 **72.1** Understanding human neurodevelopmental disorders through zebrafish genetics and imaging. **H. Sive, L.A. Lowery and J. Gutzman.** Whitehead Inst. for Biomed. Res.
3:00 **72.2** Latent stem cells in the zebrafish post-embryonic neural crest. **D.M. Parichy.** Univ. of Washington.
3:30 **72.3** The role of Fgf8 in cardiovascular development and human congenital heart disease. **A. Moon.** Univ. of Utah.
4:00 **72.4** Zebrafish models of human digestive disease. **M. Pack.** Univ. of Pennsylvania.

73. ENDOTHELIAL CELL BIOLOGY

Hybrid Symposium

SUN. 2:30 PM—CONVENTION CENTER, ROOM 156

CHAIRED: *C. LITTLE*

2:30 General discussion.
2:35 **73.1** Sphingolipid signaling in the regulation of vascular network assembly. **K.M. Argraves, B.A. Wilkerson, A.W. Hunter, P.J. Gazzolo, W.S. Argraves, L.M. Obeid and C.J. Drake.** Med. Univ. of South Carolina and Ralph H. Johnson VA Med. Ctr.
3:05 **73.2** VE-cadherin and avb3 integrin-mediated collective cell migration and patterning during vasculogenesis. **A. Czirok, E.D. Perryn, A. Szabo and C.D. Little.** Univ. of Kansas Med. Ctr. and Eotvos Univ., Hungary.
3:35 **73.3** Endothelial cell-stromal interactions during angiogenesis. **C.C.W. Hughes, M.N. Nakatsu and M.T. Holderfield.** Univ. of California-Irvine.
4:05 **73.4** Lymphatic endothelial cell behavior: emerging roles in transport, metabolism, and lymphocyte trafficking. **M.A. Swartz.** Fed. Polytech Sch., Lausanne.
4:35 **73.5** Treatment of endothelial cells in vitro with varying concentrations of diesel particles and carbon black. **M-W. Chao, A. Pettit, D.R. Gerecke, R. Laumbach and M.K. Gordon.** Rutgers Univ. and UMDNJ-Robert Wood Johnson Med. Sch., Piscataway.
4:50 Discussion.

74. OXIDATIVE STRESS IN STEM CELL BIOLOGY

Symposium

SUN. 2:30 PM—CONVENTION CENTER, ROOM 158

CHAIRED: *M. DUNNWALD*

2:30 Introduction.
2:35 **74.1** Antioxidant protein levels and activities in epidermal progenitor cells. **M. Dunnwald, W. Carr and L.W. Oberley.** Univ. of Iowa.
2:55 Q & A.
3:00 **74.2** Expression and function of antioxidant enzymes in human endothelial progenitor cells. **Z.S. Katusic.** Mayo Clin.
3:25 Q & A.
3:30 **74.3** Redox regulation of progenitor cell function in development and pathology. **M. Noble.** Univ. of Rochester Med. Ctr.
3:55 Q & A.

4:00 **74.4** Reactive oxygen species as messengers in signaling pathways leading to cardiovascular differentiation. **M. Wartenberg and H. Sauer.** GKSS, Teltow and Inst. of Physiol., Giessen, Germany.
4:25 Q & A.

75. R.R. BENSLEY LECTURE: CELL BIOLOGY

Award Lecture

SUN. 5:00 PM—CONVENTION CENTER, ROOM 158

5:00 **75.1** Lessons from the enemy: what pathogens have taught us about the control of cytoskeletal dynamics. **M.D. Welch.** Univ. of California-Berkeley.

76. KEYNOTE LECTURE

SUN. 6:15 PM—CONVENTION CENTER, ROOM 156

6:15 **76.1** The reparative power of multipotent stromal cells from bone marrow. **D.J. Prockop.** Tulane Univ. Hlth. Sci. Ctr.

Biochemistry and Molecular Biology

77. AVANTI AWARD IN LIPIDS

Awards

SUN. 8:30 AM—CONVENTION CENTER, BALLROOM C

8:30 Introductory remarks. **D.R. Voelker.**
8:35 **77.1** Phosphoinositide lipid signaling in the regulation of membrane trafficking and organelle identity. **S.D. Emr, J. Efe, R. Botelho, J. Audhya, D. Baird and C. Stefan.** UCSD Sch. of Med. and HHMI.

78. BIOGENESIS, TRANSPORT AND COMPARTMENTALIZATION OF LIPIDS

Symposium

SUN. 9:55 AM—CONVENTION CENTER, ROOM 201

CHAIRED: *D.R. VOELKER*

Biochemistry and Signaling of Lipids Meeting

9:55 Introductory remarks. **D.R. Voelken**
10:00 **78.1** Lipid trafficking between the endoplasmic reticulum and the chloroplast in the model plant *Arabidopsis*. **C. Benning, C. Xu, K. Awai, B. Lu and J. Gao.** Michigan State Univ. and Grad. Sch. of Sci. and Engin., Saitama Univ., Japan.
10:30 Characterization of PNPLA5/GS2-like neutral lipase and identification its lipid droplet targeting motif. **E.B. Goldberg, A. Bensadoun and W.J. Brown.** Cornell Univ. **(486.8)**
10:45 **78.2** Origin and significance of membrane asymmetry in yeast. **J.C.M. Holthuis, C.F. Puts, P.M. Verhulst, T. Pomorski and G. Lenoir.** Utrecht Univ., The Netherlands and Humboldt Univ. Berlin.
11:15 The role of ABC transporters in sphingosine-1-phosphate secretion. **P. Mitra, C. Oskeritzian and S. Spiegel.** Virginia Commonwealth Univ. Sch. of Med. **(625.8)**
11:30 Discovery of a novel regulatory pathway in cholesterol metabolism. **X. Li, W.M. Pandak, S. Erickson and S. Ren.** VA McGuire Med. Ctr., San Francisco. **(487.6)**
11:45 **78.3** Macromolecular assemblies of lipids and proteins regulate nonvesicular phospholipid traffic. **D.R. Voelker.** Natl. Jewish Med. and Res. Ctr.

79. CHEMICAL BIOLOGY OF CELL DEATH

Symposium

SUN. 9:55 AM—CONVENTION CENTER, ROOM 202A

CHAIRED: *P.J. HERGENROTHER*

Chemical Biology Meeting

9:55 Introductory remarks. **P.J. Hergenrother.**
10:00 **79.1** Life on the edge: therapeutic uses of cytotoxic natural products. **C.M. Crews, S.J. Leuenroth, D. Okuhara, J.D. Shotwell, G.S. Markowitz, Z. Yu and S. Somlo.** Yale Univ. and Columbia Univ.
10:35 Site specific acetylation of p53 directs selective transcription complex assembly on p53 target gene promoters. **S. Roy and M. Tenniswood.** Univ. of Notre Dame. **(497.10)**
10:50 **79.2** Direct procaspase-3 activation as a personalized anti-cancer strategy. **P.J. Hergenrother.** Univ. of Illinois, Urbana.
11:25 Fluorescent metal ion biosensing: a tool for measuring Zn(II) at the molecular level. **T.K. Hurst, L. Chang, R.B. Thompson and C.A. Fierke.** Univ. of Michigan and Univ. of Maryland Med. Sch. **(790.7)**
11:40 **79.3** Studying mechanisms of cell death: from apoptosis to necrosis. **J. Yuan, A. Degterev, Z. Huang, P. Jagtap, G. Cuny and M. Moskowitz.** Harvard Med. Sch., Massachusetts Gen. Hosp., Charlestown and Brigham and Women's Hosp.

80. CHROMATIN STRUCTURE AND REMODELING

Symposium

SUN. 9:55 AM—CONVENTION CENTER, ROOM 206

CHAIRED: *G.J. NARLIKAR*

The Chromosome Cycle Meeting

9:55 Introductory remarks. **G.J. Narlikar.**
10:00 **80.1** Short- and long-range internucleosome interactions of the core histone tail domains. **J. Hayes, P-Y. Kan, X. Wang, X. Lu and J. Hansen.** Univ. of Rochester Med. Ctr. and Colorado State Univ.
10:30 Multiscalar nucleosome dynamics in silico — role of DNA and histone tails. **S. Sharma, F. Ding and N.V. Dokholyan.** Univ. of North Carolina at Chapel Hill. **(516.1)**

10:45 **80.2** Recognition of nucleosome substrates by chromatin enzymes. **S. Tan, B. Hnatkovich, J. Irvine, W. Selleck and D. Sermwittayawong.** Penn State.
11:15 Structures and function of PHD fingers of ING tumor suppressors. **P.V. Pena, F. Davrazou, R. Hom, K. Champagne, X. Shi, K.L. Walter, V.V. Verkhusha, O. Gozani, R. Zhao and T.G. Kutateladze.** Univ. of Colorado Hlth. Sci. Ctr., Aurora, Stanford Univ. and Albert Einstein Col. of Med. **(516.2)**
11:30 Structural basis of RNA polymerase II substrate specificity and catalysis. **D. Wang, D.A. Bushnell, K.D. Westover, C.D. Kaplan and R.D. Kornberg.** Stanford Univ. Sch. of Med. **(660.6)**
11:45 **80.3** Mechanism of the ATP-dependent chromatin remodeling complex ACF. **G.J. Narlikar, J.G. Yang, L. Racki and P. Partensky.** UCSF.

81. CLASSROOM OF THE FUTURE II

Symposium

(Supported by an educational grant from the National Science Foundation)

Sun. 9:55 am—Convention Center, Room 208A/B

Chaired: *J.E. Bell*

Education and Professional Development Committee Sponsored Symposium

9:55 Introductory remarks. **J.E. Bell.**
10:00 **81.1** Removing the barrier between teaching in the classroom and research in the laboratory. **C. Mattos and P.D. Swartz.** North Carolina State Univ.
10:30 Preparing highly competent biochemists: the potential of the classroom. **J. Loertscher and V. Minderhout.** Seattle Univ. **(525.2)**
10:45 **81.2** Bringing research to introductory chemistry classes. **E. Bell.** Univ. of Richmond.
11:15 Crossing over: an undergraduate service learning project aimed at creating instructional materials for genetics education in high school classrooms. **A.T. Hark.** Muhlenberg Col. **(525.4)**
11:30 Developing critical thinking in introductory biochemistry through exploratory writing in an electronic collaborative learning environment. **K.A. Haushalter.** Harvey Mudd Col. **(525.7)**
11:45 **81.3** Combining chemistry and biology in the classroom. **C.L. Drennan.** MIT.

82. EXPERIMENTAL AND COMPUTATIONAL DYNAMICS

Symposium

Sun. 9:55 am—Convention Center, Room 207B

Chaired: *L.E. Kay*

Macromolecular Structure and Dynamics Meeting

9:55 Introductory remarks. **L.E. Kay.**
10:00 **82.1** Seeing the invisible by solution NMR spectroscopy. **L.E. Kay.** Univ. of Toronto.
10:30 Lit-structure in the dark: conformational dynamics of phototropin LOV2 domain by relaxation NMR. **X. Yao, K. Gardner and M. Rosen.** Univ. of Texas Southwestern Med. Ctr. and HHMI, Dallas. **(508.3)**
10:45 **82.2** Computational studies of protein dynamics. **J.A. McCammon.** UCSD.
11:15 A molecular switch—insights into allosteric control of vinculin function from in silico study of its large-scale conformational dynamics. **Y. Chen and N.V. Dokholyan.** Univ. of North Carolina at Chapel Hill. **(508.1)**
11:30 Picometer-scale conformational heterogeneity separates functional from nonfunctional states of a photoreceptor protein. **U.K. Genick, P.D. Coureux, Z.P. Fan and V. Stojanoff.** Brandeis Univ. and Brookhaven Natl. Lab., Upton, NY. **(649.2)**
11:45 **82.3** Probing single molecule dynamics: from in vitro to in vivo. **S. Xie.** Harvard Univ.

83. BEST PRACTICES IN ASSESSMENT OF MINORITY PROGRAMS

Symposium

Sun. 9:55 am—Convention Center, Room 209C

Chaired: *T. Sumter*

Minority Affairs Committee Sponsored Symposium

9:55 Introductory remarks. **T. Sumter.**
10:00 **83.1** Alliances for success. **A.J. Hicks.** Natl. Sci. Fndn.
10:40 **83.2** UC Berkeley's Biology Scholars Program—14 years of data, questions, and lessons. **J. Matsui.** Univ. of California-Berkeley.
11:20 **83.3** The Meyerhoff Scholarship Program at UMBC—analyzing the elements of success. **J.L. Zimmerman.** Univ. of Maryland Baltimore County.
12:00 Discussion.

84. MEMBRANE BIOGENESIS

Symposium

Sun. 9:55 am—Convention Center, Room 207A

Chaired: *D.E. Kahne*

Organelle Dynamics Meeting

9:55 Introductory remarks. **D.E. Kahne.**
10:00 **84.1** Identifying outer membrane biogenesis factors in *Escherichia coli*. **N. Ruiz.** Princeton Univ.
10:30 Effect of conjugated linoleic acid isomers on membrane raft composition. **D.K. Singh, D. Sircar and P.V. Subbaiah.** Univ. of Illinois at Chicago. **(629.1)**
10:45 **84.2** Sorting of lipoproteins to the outer membrane of Gram-negative bacteria. **H. Tokuda.** Univ. of Tokyo.
11:15 Differential interactions between the C2B domain of synaptotagmin-I and the *Drosophila* stonedA and stonedB proteins. **C. Soekmadji and L.E. Kelly.** Univ. of Melbourne. **(490.1)**
11:30 TBA.
11:45 **84.3** Structure of a fragment of the bacterial outer membrane protein assembly machinery. **D.E. Kahne.** Princeton Univ.

85. MOLECULAR RECOGNITION AND ENZYMOLOGY OF RNA

Symposium

SUN. 9:55 AM—CONVENTION CENTER, ROOM 209A

CHAIRED: *A.M. PYLE*

RNA Meeting

9:55 Introductory remarks. **A.M. Pyle.**
10:00 **85.1** Group II intron ribozymes: RNA machines that shape eukaryotic evolution. **A.M. Pyle.** Yale Univ.
10:35 **85.2** Structural studies of ligand binding by mRNA riboswitches. **R.T. Batey.** Univ. of Colorado at Boulder.
11:10 Structure of an mRNA:repressor complex—ferritin-IRE: IRP1. **E.C. Theil, W.E. Walden and K. Volz.** Children's Hosp. Oakland Res. Inst., CA, Univ. of California-Berkeley and Univ. of Illinois at Chicago. **(656.1)**
11:25 Reverse torpedoes model for the termination and processing of U3 snoRNA. **R.N. Nazar and S. Nabavi.** Univ. of Guelph, Canada. **(811.8)**
11:40 **85.3** Mechanisms of RNA catalysis. **S.A. Strobel.** Yale Univ.

86. MODELING OF CELL SYSTEMS

Symposium

SUN. 9:55 AM—CONVENTION CENTER, ROOM 202B

CHAIRED: *J. FERRELL*

Systems Biology Meeting

9:55 Introductory remarks. **J. Ferrell.**
10:00 TBA. **W. Lim.** UCSF.
10:30 Pyrimidine nucleotide de novo biosynthesis as a model of metabolic control. **M. Rodriguez Rodriguez, M.E. Wales, T. Good and J.R. Wild.** Natl. Acad./Air Force Res. Lab., Wright-Patterson AFB, Texas A&M Univ. and Univ. of Maryland Baltimore County. **(502.5)**
10:45 **86.1** Understanding complex reaction networks in space and time using microfluidics. **R.F. Ismagilov, C.J. Kastrup, M.K. Runyon, F. Shen and E. Lucchetta.** Univ. of Chicago.
11:15 Scaffold proteins confer diverse regulatory properties to protein kinase cascades. **J.W. Locasale, A.K. Chakraborty and A. Shaw.** MIT and Washington Univ. Sch. of Med. **(502.1)**
11:30 Modeling signal specificity by feedback inhibition. **N. Hao, N. Yildirim, S. Parnell, B. Errede, T. Elston and H. Dohlman.** Univ. of North Carolina at Chapel Hill. **(502.2)**
11:45 Bistability in cell signaling. **J. Ferrell.** Stanford Univ.

No Smoking

In Session Rooms, Poster or Exhibit Area

87. ASBMB AWARD FOR EXEMPLARY CONTRIBUTIONS TO EDUCATION

Awards

SUN. 12:30 PM—CONVENTION CENTER, ROOM 201

Undergraduate Student Poster Competition Awards will be presented at the start of the award lecture.

12:30 Introductory remarks. **C. Cameron.**
12:35 **87.1** The importance of research in the undergraduate curriculum: explorations in genomics. **S.C.R. Elgin, E.R. Mardis, J. Buhler, C.S. Trosset and D.E. Lopatto.** Washington Univ., Hampshire Col. and Grinnell Col.

88. ASBMB MEET THE SPEAKERS SERIES

Special Session

SUN. 1:00 PM—CONVENTION CENTER, ASBMB LOUNGE

Meet the ASBMB Award Lecturers in an informal setting for discussion and networking. Check the ASBMB Lounge for the daily schedule.

89. ASBMB - MERCK AWARD

SUN. 2:15 PM—CONVENTION CENTER, BALLROOM C

2:15 Introductory remarks.
2:20 **89.1** Quinoproteins and cofactors: expecting the unexpected. **J.P. Klinman.** Univ. of California-Berkeley.

90. SCIENCE AT UNDERGRADUATE INSTITUTIONS

Symposium

(Supported by an educational grant from the National Science Foundation)

SUN. 3:30 PM—CONVENTION CENTER, ROOM 209C

CHAIRED: *P. A. ORTIZ, J. J. PROVOST AND M. A. WALLERT*

Education and Professional Development Committee Sponsored Symposium

3:30 Introductory remarks.
3:35 **90.1** Altering the catalytic machinery and substrate selectivity of serine proteases. **T. Baird, W.D. Wright, Y. Gu and B. Williams.** San Francisco State Univ.
4:05 Neuropeptide substrate specificity in thimet oligopeptidase is conferred by glycine residues residing in a loop region. **M.A. Srikanthan, M.M. Song, L.A. Bruce, L.H. Kua, A. Pabon, M.J. Glucksman, J.A. Sigman, D.E. Elmore and A.J. Wolfson.** Wellesley Col., Rosalind Franklin Sch. of Med. and Sci./Chicago Med. Sch. and St. Mary's Col. of California. **(805.6)**
4:20 Molecular characterization and genetic regulation of lipid metabolism in *Saccharomyces cerevisiae* mga2 and pdr16 mutants. **C. Rice, P. Vollbrecht, M. Cooke, J. Stukey and V. McDonough.** Hope Col. **(487.1)**
4:35 **90.2** Tricyclic antidepressants, but not the selective serotonin reuptake inhibitor fluoxetine, bind to the S1S2 domain of AMPA receptors. **L.N. Gentile, S. Seguin and L. Stoll.** Univ. of Richmond and Western Washington Univ.

5:05 The crystal structure of the fast exchange mutant I56C/Q333C in $G\alpha_{i1}$ suggests a mechanism for receptor-mediated allosteric nucleotide exchange. **M.A. Funk, W.M. Oldham, A.M. Preininger, H.E. Hamm and T.M. Iverson.** Vanderbilt Univ. Med. Ctr. **(631.1)**

5:20 **90.3** Stress and cancer progression: novel roles for the α_1-adrenergic receptor and PLD1. **J.J. Provost and M.A. Wallert.** Minnesota State Univ. Moorhead.

91. STRUCTURAL ENZYMOLOGY

Symposium

SUN. 3:30 PM—CONVENTION CENTER, ROOM 207B

CHAIRED: *G. A. PETSKO*

Enzymes - Mechanism and Design Meeting

3:30 Introductory remarks. **G.A. Petsko.**

3:35 **91.1** Structural enzymology in the haloalkanoic acid dehalogenase superfamily. **K.N. Allen.** Boston Univ. Sch. of Med.

4:05 Structural and biochemical analyses of human insulin-degrading enzyme reveal a new substrate recognition mechanism. **W-J. Tang, Y. Shen, A. Joachimiak, M. Rosner and P. Li.** Univ. of Chicago and Argonne Natl. Lab. **(654.4)**

4:20 **91.2** Novel inactivation of pyridoxal phosphate-dependent enzymes. **D. Ringe and D. Liu.** Brandeis Univ.

4:50 The gatekeeper residue controls autoactivation of ERK2 via a pathway of intramolecular connectivity. **M.A. Emrick, T. Lee, K.A. Resing, N.G. Ahn and M.C. Mumby.** Univ. of Colorado at Boulder and HHMI and Univ. of Texas Southwestern Med. Ctr. **(652.5)**

5:05 The processive protease ClpAP translocates its substrate in discrete steps. **L.D. Jennings, D.S. Lun, M. Medard and S. Licht.** MIT. **(510.8)**

5:20 **91.3** Structural basis for radical reaction mechanisms in the actions of lysine aminomutases. **P.A. Frey.** Univ. of Wisconsin-Madison.

92. EXTRACELLULAR MATRIX AT THE TISSUE SCALE

Symposium

SUN. 3:30 PM—CONVENTION CENTER, ROOM 202B

CHAIRED: *E. FUCHS*

Extracellular Matrix at Multiple Biological Scales Meeting

3:30 Introductory remarks. **E. Fuchs.**

3:35 **92.1** Laminins regulate crypt-villus architecture and epithelial cell behavior in the mouse intestine. **J.H. Miner, Z.X. Mahoney and T.S. Stappenbeck.** Washington Univ. Sch. of Med.

4:10 **92.2** Tumor microenvironment in cancer progression and metastasis. **R. Kalluri.** Beth Isreal Deaconess Med. Ctr. and Harvard Med. Sch.

4:45 Matrix-specific PAK activation regulates vascular permeability in atherosclerosis. **A.W. Orr, R. Stockton, M. Simmers, J.M. Sanders, B.R. Blackman and M.A. Schwartz.** Univ. of Virginia and UCSD. **(506.6)**

5:00 JNK p46 is activated when skeletal muscle contracts in response to electrical stimulation of the sciatic never in rat. **Y. Zhou, D. Jiang and H.W. Jarrett.** Univ. of Texas at San Antonio. **(507.3)**

5:15 **92.3** Stem cells and morphogenesis. **E. Fuchs.** Rockefeller Univ.

93. RECOMBINING AND MODIFYING DNA

Symposium

SUN. 3:30 PM—CONVENTION CENTER, ROOM 206

CHAIRED: *D. G. SCHATZ*

From Genome to Epigenome - Modification and Repair Meeting

3:30 Introductory remarks. **D.G. Schatz.**

3:35 **93.1** The mechanism of asymmetric strand exchange in Cre-loxP site-specific recombination. **G. Van Duyne and K. Ghosh.** HHMI and Univ. of Pennsylvania .

4:10 The requirement of a Ku-IPp6 (inositol hexakisphosphate) complex for efficient repair of DNA double strand breaks by nonhomologous end joining in mammals. **J.C.Y. Cheung and L.A. Hanakahi.** Johns Hopkins Bloomberg Sch. of Publ. Hlth. **(521.2)**

4:25 **93.2** Correlating structure and mechanism in a DNA transposition system. **W. Reznikoff.** Univ. of Wisconsin-Madison.

5:00 Architecture of the 99 bp DNA–Six protein regulatory complex of the λ *att* site. **X. Sun, D.F. Mierke, T. Biswas, A. Landy, M. Radman-Livaja and SY. Lee.** Brown Univ. and Harvard Med. Sch. **(520.1)**

5:15 **93.3** Probing the structure of RAG protein-DNA intermediates in V(D)J recombination. **D. Schatz and M. Ciubotaru.** Yale Med. Sch., HHMI.

94. MOLECULAR AND CELLULAR ASPECTS OF METABOLIC DISEASE

Symposium

SUN. 3:30 PM—CONVENTION CENTER, ROOM 207A

CHAIRED: *M. MONTMINY*

Metabolism Meeting

3:30 Introductory remarks. **M. Montminy.**

3:35 **94.1** Regulation of glucose and lipid metabolism by Akt/PKB. **M.J. Birnbaum.** HHMI, Univ. of Pennsylvania.

4:05 Angiotensin II-induced insulin resistance in skeletal muscle by activation of nuclear factor κB via NADPH oxidase. **Y. Wei, J.R. Sowers, S.E. Clark, C.M. Ferrario and C.S. Stump.** Univ. of Missouri-Columbia, HST VA Hosp., Univ. of Arizona and Bowman Gray Sch. of Med. at Wake Forrest Univ. **(667.3)**

4:20 **94.2** The metabolism of cell growth: aerobic glycolysis. **C.B. Thompson.** Univ. of Pennsylvania.

4:50 Niemann-Pick type C2 protein regulates adipocyte metabolism.ec: **A. Frolov, C. Csepeggi and H. Du.** Univ. of Cincinnati and Cincinnati Children's Hosp. **(667.10)**

5:05 SCD1 deficiency prevents obesity-induced macrophage recruitment into white adipose tissue and improves the associated adipose insulin resistance. **X. Liu, M. Flowers, M. Miyazaki, K. Chu and J. Ntambi.** Univ. of Wisconsin-Madison. **(523.12)**

5:20 **94.3** The TORC family of CREB coactivators: regulators of energy balance. **M. Montminy, R. Dentin, Y. Liu and S. Hedrick.** Salk Inst. for Biol. Studies.

95. RIBOSOME AND TRANSLATION

Symposium

SUN. 3:30 PM—CONVENTION CENTER, ROOM 209A

CHAIRED: *J. R. WILLIAMSON*

Protein Synthesis, Folding and Turnover Meeting

3:30 Introductory remarks. **J.R. Williamson.**

3:35 **95.1** Dynamics of translational regulation by PKR. **J.D. Puglisi.** Stanford Univ. Sch. of Med.

4:05 O-GlcNAcylation: a new posttranslational modification of ribosomal proteins. **Q. Zeidan, N.E. Zachara, A. DeMaio and G.W. Hart.** Johns Hopkins Univ. Sch. of Med. and UCSD. **(514.1)**

4:20 **95.2** Control of translation from the mRNA 3' end. **N. Sonenberg.** McGill Univ.

4:50 Conformational flexibility required for class I release factor function. **A. Gautam, D.E. Eyler and R. Green.** Johns Hopkins Sch. of Med. and Howard Hughes Med. Inst. **(653.1)**

5:05 Mapping functional regions of mitochondrial initiation factor 3. **B. Christian and L.L. Spremulli.** Univ. of North Carolina at Chapel Hill. **(513.2)**

5:20 **95.3** A postproteomic approach to study ribosome assembly. **J.R. Williamson.** The Scripps Res. Inst.

96. CYTOKINE AND GROWTH FACTOR SIGNALING

Symposium

SUN. 3:30 PM—CONVENTION CENTER, ROOM 202A

CHAIRED: *J. SCHLESSINGER*

Signaling Pathways Controlling Cell Structure and Fate Meeting

3:30 Introductory remarks. **J. Schlessinger.**

3:35 **96.1** Activation and inhibition of the EGF receptor. **M.A. Lemmon.** Univ. of Pennsylvania Sch. of Med.

4:05 TULA: a novel protein that affects activation and degradation of protein tyrosine kinases. **R. Agrawal and A.Y. Tsygankov.** Temple Univ. **(784.3)**

4:20 **96.2** Signal transduction via receptors for PDGF and TGF-β —— possible targets in tumor therapy. **C-H. Heldin.** Ludwig Inst. for Cancer Res., Uppsala.

4:50 The SH2 interactome: development and utility of a phosphotyrosine-specific yeast two-hybrid system to identify and analyse signalling pathways. **E. Ingley, C.J. Payne, S.V. Murphy, J.R. Schnieder, D.J. McCarthy, A. Samuels and S.P. Klinken.** Western Australian Inst. for Med. Res. **(493.2)**

5:05 O-GlcNAcylation of kinases. **W.B. Dias and G.W. Hart.** Johns Hopkins Univ. **(784.2)**

5:20 **96.3** Cell signaling by receptor tyrosine kinases: from bench to bedside. **J. Schlessinger.** Yale Univ.

97. PUI GRANT WRITING WORKSHOP AND NETWORKING RECEPTION

Workshop

SUN. 6:00 PM—CONVENTION CENTER, ROOM 203A/B

CHAIRED: *E. BELL AND J. CHIN*

Eduction and Professional Development Committee Sponsored Workshop

Nutrition

98. PRESIDENTIAL SYMPOSIUM: CHILDHOOD TYPE 2 DIABETES — WHO IS AT RISK, WHY AND WHAT CAN WE DO?

Symposium

(*Supported by an educational grant from Merck & Co., Inc.*)

SUN. 8:00 AM—CONVENTION CENTER, BALLROOM A

CHAIRED: *S.A. ATKINSON*

8:00 Welcome and overview of symposium. **S.A. Atkinson.** McMaster Univ., Canada.

8:05 Epidemiology and demographics of adolescent type 2 diabetes. **P.S. Zeitler.** Children's Hosp., Univ. of Colorado Hlth. Sci. Ctr.

8:40 Insulin resistance in type 2 diabetes: the AMPK/malonyl CoA hypothesis. **N. Ruderman.** Boston Med. Ctr., Boston Univ. Sch.of Med.

9:10 Type 2 diabetes in youth: black/white contrast in metabolic risk. **F. Bacha.** Children's Hosp. of Pittsburgh.

9:35 Type 2 diabetes in children and youth: what lessons have we learned? **F. Kaufman.** Keck Sch. of Med.

99. 10TH ANNUAL PhenHRIG CONFERENCE AND MEETING — ANTIOXIDANT MECHANISMS OF ACTION OF FLAVONOIDS

Conference

SUN. 8:00 AM—CONVENTION CENTER, ROOM 150A

CHAIRED: *M.D. GROSS*

8:00 Introduction.
Welcome to PhenHRIG and introduction. **M.D. Gross.** President, Plant Phenolics and Hum. Hlth. Res. Interest Gp. (PhenHRIG).

8:15 I. Keynote Address
Novel mechanisms of flavonoid action. **S. Barnes.** Univ. of Alabama at Birmingham.
9:00 II. Mechanisms of catechin action in cardiovascular disease. **J. Keaney.** Univ. of Boston.
9:30 Citrus flavonoids and their actions in lipid metabolism. **M. Huff.** Univ. of Western Ontario.
10:00 Break.
10:20 III. Isoflavones and their mechanisms of action. **D.F. Birt.** Iowa State Univ.
10:50 Regulation of neural function by flavonoids. **P. Maher.** Salk Inst.
11:20 TBA.
11:50 Conclusion.

100. CHARACTERIZATION OF PROTEOMIC AND METABOLOMIC RESPONSES TO DIETARY FACTORS AND SUPPLEMENTS

Symposium

(Supported by an educational grant from NIH/NCCAM/ODS/NCI)

SUN. 10:30 AM—CONVENTION CENTER, BALLROOM A

CHAIRED: *G.B. MAHADY*

COCHAIRED: *K. SINGLETARY*

10:30 Protein fingerprinting of complex mixtures. **J. Astle.** Univ. of Texas Southwestern Med. Ctr.
11:00 Parallel characterization of RNA and the proteome by top down mass spectrometry. **N. Kelleher.** Univ. of Illinois at Urbana-Champaign.
11:30 Metabolic profiling of natural products and drugs. **G. Harrigan.** Monsanto Co.
12:00 Metabolomics in nutrition. **J.B. German.** Nestle Res. Ctr., Lausanne.

101. NUTRITIONAL CONTROL OF IMMUNITY IN HEALTH AND CHRONIC DISEASE

Minisymposium

SUN. 10:30 AM—CONVENTION CENTER, ROOM 151A

CHAIRED: *S. KUBIVIDILA*

COCHAIRED: *N. AHLUWALIA*

10:30 Chair's introduction.
10:45 **101.1** The relationship between dose and form of omega-3 (n-3) fatty acids in the diet and immune cell fatty acid profiles in humans and rodent animal models. **K.L. Fritsche.** Univ. of Missouri-Columbia.
11:00 **101.2** Specific formulation of *Camellia sinensis* prevents cold and flu symptoms: a randomized, double-blind, placebo-controlled study. **J.F. Bukowski, M.P. Nantz, C.A. Rowe, A. Azeredo and S.S. Percival.** Harvard Med. Sch., Brigham and Women's Hosp. and Univ. of Florida.
11:15 **101.3** Docosahexaenoic acid-enriched fish oil attenuates kidney disease and prolongs median and maximal life span of autoimmune lupus-prone mice. **G. Fernandes, M.M. Rahman, B. Arunabh and B. Chandrasekar.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio.
11:30 **101.4** Caloric restriction increases early susceptibility to influenza infection in young C57BL/6 mice despite an intact NK cell response. **B.W. Ritz, S. Nogusa and E.M. Gardner.** Drexel Univ.
11:45 **101.5** Effect of dietary supplementation with white button mushroom on immune function of C57BL mice. **D. Wu, M. Pae, Z. Ren, Z. Guo, D. Smith and S.N. Meydani.** USDA at Tufts Univ.
12:00 **101.6** Commonly consumed mushrooms regulate cytokine production from macrophage. **S. Yu, V. Weaver, K. Martin and M.T. Cantorna.** Penn State.
12:15 **101.7** Epigallocatechin-3-gallate inhibits IL-1β-induced IL-6 production and cyclooxygenase-2 expression in rheumatoid arthritis synovial fibroblasts in vitro. **S-u. Ahmed, A. Pakozdi and A.E. Koch.** Univ. of Michigan Med. Sch. and VA Med. Ctr.

102. VITAMIN A AND CAROTENOIDS I

Minisymposium

SUN. 10:30 AM—CONVENTION CENTER, ROOM 151B

CHAIRED: *H.C. FURR*

COCHAIRED: *R.M. CLARK*

10:30 **102.1** Consumption of one egg per day increases serum lutein and zeaxanthin concentrations in older adults without altering serum lipid and lipoprotein cholesterol concentrations. **T.A. Wilson, E. Goodrow, S. Houde, R. Vishwanathan, P. Scollin, G. Handelman and R. Nicolosi.** Univ. of Massachusetts Lowell.
10:45 **102.2** The prime role of HDL to transport lutein into the retina: evidence from HDL-deficient WHAM chicks characterized by a mutant ABCA1 transporter. **W.E. Connor, P.B. Duell, R. Kean and Y. Wang.** Oregon Hlth. & Sci. Univ. and Univ. of Wisconsin-Madison.
11:00 **102.3** A novel role for beta-carotene 9,10-monooxygenase 2 in prostate cancer cells. **X. Gong, S. Zaripheh, E. Zarkhin, W. Gong and L.P. Rubin.** Cleveland Clin. Fndn. and RoseDMI, Rosemont, IL.
11:15 **102.4** Short-term consumption of lycopene and phytofluene decreases PPARα and PPARγ expression in selected rat tissues. **A. Liu, M.T. Nakamura, B.E. Yudell and J.W. Erdman, Jr..** Univ. of Illinois, Urbana.
11:30 **102.5** Vitamin A (VA) alone or combined with retinoic acid in the neonatal period improves the secondary response to tetanus toxoid in VA-deficient rats. **S. Sankaranarayanan, Y. Ma, N-Q. Li, M. Bryson and A.C. Ross.** Penn State.
11:45 **102.6** β-Carotene and vitamin E supplementation on immunity and oxidative status in geriatric dogs. **J.S. Park, M.G. Hayek, G.A. Reinhart, S. Massimino and B.P. Chew.** Washington State Univ. and P&G Pet Care, Lewisburg, OH.
12:00 **102.7** Vitamin A kinetics and utilization in Chinese versus U.S. adults. **C.J. Cifelli, Z. Wang, S. Yin, R.M. Russell, G. Tang and M.H. Green.** Penn State, Chinese Ctr. of Dis. Control and Prevent., Beijing, Qingdao Univ. Med. Col., People's Republic of China and USDA at Tufts Univ.
12:15 **102.8** Maternal chronic vitamin A toxicity amplifies early fetal liver retinyl ester storage in captive Old World monkeys. **J.P. Mills, E. Terasawa and S.A. Tanumihardjo.** Univ. of Wisconsin-Madison.

103. DIETARY BIOACTIVE COMPOUNDS: MEDICINAL FOOD I

Minisymposium

SUN. 10:30 AM—CONVENTION CENTER, ROOM 153

CHAIRED: *K-Y. PARK*

COCHAIRED: *J. W. DAILY III*

10:30 Chair's introduction.

10:35 **103.1** Vinegar ingestion at bedtime appears to moderate waking hyperglycemia in adults with type 2 diabetes. **A. White and C.S. Johnston.** Arizona State Univ.

10:50 **103.2** Effects of genistein dosage with carnitine administration on lipid and carnitine profiles in C57BL/6J mice fed high-fat diets. **Y-S. Cha, E-G. Mun and H-S. Sohn.** Chonbuk Natl. Univ., Republic of Korea.

11:05 **103.3** Active components in aloe alleviate inflammatory responses of DSS-induced ulcerative colitis. **M-Y. Park, H-J. Kwon and M-K. Sung.** Sookmyung Women's Univ., Republic of Korea and Seoul Natl. Univ.

11:20 **103.4** Hypoglycemic effects of ginger in mildly and severely diabetic rats. **M. Thomson, Z.M. Al-Amin, K.K. Al-Qattan and M. Ali.** Kuwait Univ. Fac. of Sci.

11:35 **103.5** Activation of caspase-8 contributes to fucoidan-induced apoptosis in HT-29 human colon cancer cells. **E.J. Kim, S.Y. Park, H.S. Park, J.E. Hong, M.J. Sin, H-K. Shin, D.Y. Kwon, Y-J. Surh and J.H.Y. Park.** Hallym Univ., Korea Food Res. Inst. and Col. of Pharm., Seoul Natl. Univ.

11:50 **103.6** Inhibition of phorbol ester-induced COX-2 expression by 3,3′-diindolylmethane in human mammary epithelial cells. **S.Y. Park, E.J. Kim, I-J. Kang, Y-H. Kang, H-K. Shin and J.Y. Park.** Hallym Univ., Republic of Korea.

12:05 **103.7** Absorption and antioxidant effects of polyphenolics from açai (*Euterpe Oleracea Mart*) in healthy human volunteers. **S.U. Mertens-Talcott, J.M. Rios, P. Jilma-Stohlawetz, S.T. Talcott and H. Derendorf.** Texas A&M Univ. and Univ. of Florida.

12:20 **103.8** Effects of haedokbangamtang3 on immune and nutritional status in radiation-induced inflammatory animal model using Wistar rat. **J-I. Kang, Y-R. Lee, E-M. Kim, K-O. Kim, S-H. Kang, M. Chun and H-S. Kim.** Sookmyung Women's Univ. and Ajou Univ. Sch. of Med., Republic of Korea.

12:35 Conclusion.

104. SURVEY METHODOLOGY AND MONITORING OF DIETARY INTAKE I

Minisymposium

SUN. 10:30 AM—CONVENTION CENTER, ROOM 150B

CHAIRED: *A.E. MILLEN*

COCHAIRED: *J. REEDY*

10:30 **104.1** What people are really eating: food intakes relative to recommendations. **J.L. Sieber, S.M Krebs-Smith and J. Reedy.** Univ. of Tennessee and NCI, NIH, Rockville.

10:45 **104.2** Comparison of historical approaches to evaluating population concordance with the 1997 WCRF/AICR cancer prevention guidelines: toward a rationalization and synthesis. **M. Vossenaar, N.W. Solomons, R. Valdes-Ramos, M.C. Ocke, J. Seidell, M.E.J. Lean and A.S. Anderson.** CeSSIAM, Guatemala City, Univ. Autonoma State of Mexico, Toluca, Natl. Inst. for Publ. Hlth. and Envrn., Bilthoven, Free Univ. of Amsterdam, Univ. of Glasgow Royal Infirmary and Univ. of Dundee Ninewells Hosp and Med. Sch.

11:00 **104.3** Evaluation of the psychometric properties of the revised healthy eating index. **P.M. Guenther, B.B. Reeve, J. Reedy, S.M. Krebs-Smith and P.P. Basiotis.** USDA, Alexandria, VA and NCI, NIH.

11:15 **104.4** Feasibility of collecting dietary supplement use information in conjunction with the collection of 24-hour dietary recalls using a 3-tiered approach incorporated into a dietary analysis program. **L.J. Harnack, N. Van Heel, M. Steven and J.H. Himes.** Univ. of Minnesota, Minneapolis.

11:30 **104.5** Comparison of label versus analytical values for 23 vitamins and minerals in adult multivitamin/mineral products for the Dietary Supplement Ingredient Database. **K.W. Andrews, J. Roseland, C. Zhao, A. Schweitzer, J. Holden, C. Perry, J. Dwyer, M.F. Picciano, K. Fisher, L. Saldanha, E. Yetley and L. Douglass.** USDA, Beltsville, ODS, NIH and Univ. of Maryland College Park.

11:45 **104.6** Usual vitamin D intake in the United States by ethnic group: NHANES 2003-04. **D.R. Keast, X. Wang and V.L. Fulgoni III.** Food & Nutr. Database Res. Consulting, Okemos, MI, Kraft Foods Inc., Glenview, IL and Nutr. Impact LLC, Battle Creek.

12:00 **104.7** Impact of "don't know" responses on estimates of nutrient intake. **L.C. Steinfeldt, E.T. Anderson and J.D. Goldman.** USDA, Beltsville .

105. COMMUNITY AND PUBLIC HEALTH NUTRITION I

Minisymposium

SUN. 10:30 AM—CONVENTION CENTER, ROOM 152B

CHAIRED: *J. GUTHRIE*

COCHAIRED: *E. FRONGILLO*

10:30 Chair's introduction.

10:45 **105.1** Improving national data to analyze food and nutrition policies. **J.F. Guthrie and M. Denbaly.** USDA, Washington, DC.

11:00 **105.2** NHANES: development of a flexible consumer behavior survey module. **J.N. Variyam and B-H. Lin.** USDA, Washington, DC.

11:15 **105.3** Enhancing NHANES value for food assistance policy research through linkages with program administrative data. **D. Smallwood.** USDA, Washington, DC.

11:30 **105.4** Strengthening NHANES as a resource for understanding economic determinants of diet and health through development of a food prices database. **E. Leibtag and L. Mancino.** USDA, Washington, DC.

11:45 **105.5** Modernizing the food supply data system. **J.C. Buzby and H.F. Wells.** USDA, Washington, DC.

12:00 **105.6** Collecting data on eating patterns, obesity risk, and food access: the Food & Eating Module. **K.S. Hamrick, M. Andrews and J.F. Guthrie.** USDA, Washington, DC.

12:15 **105.7** Investigating effects of food insecurity and food assistance program participation on children using the ECLS-K data. **E.A. Frongillo and S.J. Jones.** Univ. of South Carolina.

106. INTERNATIONAL NUTRITION: PROGRAMS AND TRANSITIONS

Minisymposium

SUN. 10:30 AM—CONVENTION CENTER, ROOM 152A

CHAIRED: *A. STEIN*

10:30 **106.1** Preventive targeting of food aid and behavior change communication to 6-24-month-old children is more effective in reducing undernutrition than targeting malnourished children in rural Haiti. **M.T. Ruel, P. Menon, C. Loechl, M. Arimond, J-P. Habicht, G. Pelto, J. Maluccio and L. Michaud.** IFPRI, Washington, DC, Cornell Univ., Intl. Potato Ctr., Kampala, Uganda, Middlebury Col. and World Vision Haiti, Port-su-Prince.

10:45 **106.2** Conditional cash and in-kind transfers increase household total and food consumption in poor rural communities in Mexico. **J.L. Leroy, J.P. Gutiérrez, P. Gadsden, T. González-Cossío, G. Hernández Licona and J. Rivera.** Natl. Inst. of Publ. Hlth., Cuernavaca and SEDESOL, Mexico City.

11:00 **106.3** The impact of a conditional cash transfer program on food consumption: the Honduras family allowance program (PRAF). **D. Wiesmann and J. Hoddinott.** Intl. Food Policy Res. Inst., Washington, DC.

11:15 **106.4** The magnitude and pattern of purchased ready-to-eat foods in the diets of rural Ghanaian children. **E.K. Colecraft, G.S. Marquis, A.A. Lartey, O. Sakyi-Dawson, B. Ahunu, L.M. Butler, H.H. Jensen, M.B. Reddy and E. Lonergan.** Iowa State Univ., Univ. of Ghana and McGill Univ., Ste. Anne de Bellevue.

11:30 **106.5** Secular trends in food patterns of Guatemalan households: new foods for old. **O.I. Bermudez, L. Hernandez, M. Mazariegos and N.W. Solomons.** Tufts Univ. Sch. of Med. and CeSSIAM, Guatemala City.

11:45 **106.6** Does globalization change the dynamics between food prices and nutrient intake? Implications of price elasticities of child nutrient intakes for food policy in rural Mexico. **M. Arabi and E.A. Frongillo.** Cornell Univ. and Univ. of South Carolina.

12:00 **106.7** The body mass index – hypertension relationship in Vietnamese: normal BMI is linked with elevated risk. **T.T. Nguyen, T.D. Pham and B.M. Popkin.** Univ. of North Carolina at Chapel Hill and Hanoi Med. Univ.

12:15 **106.8** Overweight duration increases odds of hypertension among adult women in Cebu, Philippines. **N.R. Lee and L.S. Adair.** Univ. of North Carolina at Chapel Hill.

107. THE E.V. MCCOLLUM INTERNATIONAL LECTURESHIP

SUN. 12:45 PM—CONVENTION CENTER, BALLROOM A

Speaker: **J. Habicht.** Cornell Univ.

Title: Potential to Benefit from Nutrition Interventions: Synergisms and Antagonisms

108. APPROPRIATE ANIMAL MODELS FOR NUTRITIONAL RESEARCH IN HEALTH AND DISEASE

Symposium

(Supported by an educational grant from Nestle and Hill's Pet Nutrition, Inc.)

SUN. 3:00 PM—CONVENTION CENTER, BALLROOM A

CHAIRED: *C. STAHL*

COCHAIRED: *X.LEI AND B. LARSON*

3:00 Serendipity in experimental animal nutrition leads to progress in human nutrition. **D.H. Baker.** Univ. of Illinois at Urbana-Champaign.

3:30 Development of an animal model of obesity and NIDDM. **M. Spurlock.** Iowa State univ.

4:00 *Interactive* roles and opportunities for human and experimental animal nutritionists. **D. Bauman.** Cornell Univ.

4:30 Animal models for hypothesis validation: a system's approach to nutrition research. **S.S. Hannah.** Nestle Purina, St. Louis.

109. FROM EFFICACY TRIAL TO PUBLIC HEALTH IMPACT: IMPROVING DELIVERY AND UTILIZIATION OF NUTRITION PROGRAMS

Symposium

(Supported by an educational grant from Mainstreaming Nutrition Initiative)

SUN. 3:00 PM—CONVENTION CENTER, ROOM 151B

CHAIRED: *J.L. LEROY*

COCHAIRED: *P. MENON*

3:00 Introduction. **J.L. Leroy and P. Menon.** Cornell Univ.

3:05 Using a results framework to inform health program delivery strategies: experience from Nicaragua. **D.R. Marsh.** Save the Children, USA.

3:25 Health worker knowledge and work context: associations with behavior change outcomes in Haiti. **P. Menon.** Cornell Univ.

3:45 Delivery and utilization of the Opportunidades Program in Mexico: studying determinants on the supply and demand side. **S. Bertozzi.** Natl. Inst. of Publ. Hlth., Mexico.

4:05 Introduction of zinc for childhood diarrhea: implementation challenges at the national and community levels in Tanzania and Mali. **P. Winch.** Johns Hopkins Sch. of Publ. Hlth.

4:25 Mobilizing the family to improve the efficacy of a nutrition intervention in Central Java, Indonesia. **D. Thomas.** UCLA and Cornell Univ.

4:45 Ways forward: how applied research can improve nutrition programs. **M. Shekar.** World Bank, DC.

110. ASN PUBLIC INFORMATION COMMITTEE MEDIA TRAINING SESSION: COMMUNICATING COMPLICATED SCIENCE: THE WOMEN'S HEALTH INITIATIVE AS A CASE STUDY

Special Session

SUN. 3:00 PM—CONVENTION CENTER, ROOM 150A

Session Goals/Objectives: After this two-hour session, attendees will have a working knowledge of how journalists approach, research, and source their stories and articles. Attendees will learn how to put a media relations plan together and why having a plan is critical when communicating complicated nutrition science

Part I: Panel Discussion

Moderator: **N. Wellman,** ASN Public Information Committee

Panelists: **J. Ingmire,** Director, Media Relations, *JAMA*
C. Gorman, *Time Magazine.*
S. Borra, President, IFIC Fndn.

Part 2: How to Develop a Media Plan. **P. Daniels.** 3D Communications.

Students and recent graduates are encouraged to attend.

111. ENERGY BALANCE, MACRONUTRIENT COMPOSITION AND WEIGHT LOSS

Minisymposium

SUN. 3:00 PM—CONVENTION CENTER, ROOM 151A

CHAIRED: *J. VOLEK*

COCHAIRED: *J. BUSH*

3:00 **111.1** A comprehensive lifestyle program improves mood state and metabolic parameters with low attrition rate in overweight subjects. **S.M. Talbott, A-M. Christopulos and C. Ekberg.** SupplementWatch, Inc. and Treehouse Athletic Club, Draper, UT.

3:15 **111.2** Increased dietary protein and meal frequency improves postprandial thermogenesis in obese men and women. **P.J. Arciero, J. Simon, M. Ruby, B. Clippinger and L. Gerson.** Skidmore Col.

3:30 **111.3** High dietary calcium and vitamin D effects on fat mass accretion and expression of liver enzymes in rats. **S.M.K. Siddiqui, E. Chang, M. Zou, S.L. Koser, K.K. Buhman, S.S. Donkin and D. Teegarden.** Purdue Univ.

3:45 **111.4** Effects of a high-protein diet with or without monosodium-glutamate in combination with inosine-monophosphate-5 on 24-hour energy and appetite profile. **M. Lejeune, A. Smeets and M. Westerterp-Plantenga.** Maastricht Univ. and Wageningen Ctr. for Food Sci., The Netherlands.

4:00 **111.5** Influence of weekend lifestyle patterns on body weight. **S.B. Racette, E.P. Weiss, K.B. Schechtman, K. Steger-May and J.O. Holloszy.** Washington Univ. Sch. of Med.

4:15 **111.6** Animal protein but not dairy or calcium intake is directly associated with body weight: results from the premier trial. **P-H. Lin, Y. Wang and W. Goggins.** Duke Univ. Med. Ctr., Epidemiol. and Inst. for Nutr. Sci., Chinese Acad. of Sci., Shanghai and Chinese Univ. of Hong Kong Sch. of Publ. Hlth., Prince Wales Hosp.

4:30 **111.7** The contribution of snacking to diet quality in weight stable unrestrained men and women. **B. Burton-Freeman and N. Keim.** Univ. of California-Davis and USDA, Davis.

4:45 **111.8** Effectiveness of a vegan-based high soy protein diet on weight loss and serum lipids. **J.M.W. Wong, C.W.C. Kendall, A. Esfahani, V.W.Y. Ng, K.A. Greaves, G. Paul and D.J.A. Jenkins.** Univ. of Toronto, St. Michael's Hosp. and Solae Co., St. Louis.

112. DIET AND CANCER I

Minisymposium

SUN. 3:00 PM—CONVENTION CENTER, ROOM 150B

CHAIRED: *E. DE MEJIA*

COCHAIRED: *E.M. SCHMELZ*

3:00 **112.1** Dietary flaxseed is protective against lung cancer cell proliferation and tumor growth in the flanks of mice. **J.C. Lee, E. Arguiri, G. Cheng, C.C. Solomides and M. Christofidou-Solomidou.** Univ. of Pennsylvania and Temple Univ.

3:15 **112.2** The inhibitory effect of adiponectin on Caco-2 cell proliferation. **S. Ding, J. Whelan, M. McEntee and M.B. Zemel.** Univ. of Tennessee.

3:30 **112.3** Quercetin does not significantly affect the protection of a fish oil diet in early colon carcinogenesis. **K.J. Paulhill, S.S. Taddeo, R.J. Carroll, R.S. Chapkin, J.R. Lupton and N.D. Turner.** Texas A&M Univ.

3:45 **112.4** Soy protein isolate increases urinary estrogens and the ratio of 2:16α-hydroxyestrone in men at high risk of prostate cancer. **J.M. Hamilton-Reeves, S.A. Rebello, W. Thomas, J.W. Slaton and M.S. Kurzer.** Univ. of Minnesota, St. Paul, Sch. of Publ. Hlth., Univ. of Minnesota, Minneapolis and VA Med. Ctr.

4:00 **112.5** Selenium, but not lycopene or vitamin E, decreases growth of transplantable Dunning R3327-H prostate tumors. **B.L. Lindshield, N.A. Ford, K. Canene-Adams, M.A. Wallig and J.W. Erdman, Jr..** Univ. of Illinois at Urbana-Champaign.

4:15 **112.6** Mechanisms behind anti-tumor activity in D unning R3327-H prostate adenocarcinomas as a result of tomato and broccoli consumption. **K. Canene-Adams, E.H. Jeffery, S.K. Clinton and J.W. Erdman, Jr..** Univ. of Illinois, Urbana and Ohio State Univ.

4:30 **112.7** Plasma carotenoid analysis in colon cancer survivors and the general population. **A. Paxton, B.R. Switzer, C.C. Carr and M.K. Campbell.** Univ. of North Carolina at Chapel Hill.

4:45 **112.8** Consumption of alcoholic beverages and the risk of nasopharyngeal carcinoma: a systematic review and meta-analysis. **L. Chen, L. Gallicchio, K. Boyd-Lindsley, X. Tao, G. Matanoski, K. Robinson, J. Herman, L. Caulfield, E. Guallar and A. Alberg.** Johns Hopkins Univ. Med. Inst. and Med. Univ. of South Carolina.

NO SMOKING IN SESSION ROOMS, POSTER OR EXHIBIT AREA

113. VITAMIN A NUTRITION AND METABOLISM I

Minisymposium

SUN. 3:00 PM—CONVENTION CENTER, ROOM 152B

CHAIRED: *S.A. TANUMIHARDJO*

COCHAIRED: *A.R. VALENTINE*

3:00 Overview. From mouse to man: all need vitamin A. **S.A. Tanumihardjo.** Univ. of Wisconsin-Madison.

3:15 **113.1** Retinol reduces beta-catenin protein in retinoic acid-resistant colon cancer cells by increasing beta-catenin-RXR-alpha interaction in the nucleus and translocation into the cytosol. **A.C. Dillard and M.A. Lane.** Univ. of Texas at Austin.

3:30 **113.2** Acyl CoA:diacylglycerol acyltransferase 1 catalyzes the formation of many types of retinyl ester in mice. **B.J. Burri and T.R. Neidlinger.** USDA, Davis.

3:45 **113.3** Serum appearance and disappearance of 3, 4-didehydroretinol in Sprague Dawley rats fed a normal- versus high-fat diet. **A.L. Escaron, M.H. Green and S.A. Tanumihardjo.** Univ. of Wisconsin- Madison and Penn State.

4:00 **113.4** Lung retinyl ester is low, despite normal plasma retinol, in rats fed vitamin A-deficient diet. **A.C. Ross and N-Q. Li.** Penn State .

4:15 **113.5** DHRS3, a retinal reductase, is regulated by retinoic acid and lipopolysaccharide in THP1 cells and rat liver in vivo. **R. Zolfaghari and A.C. Ross.** Penn State.

4:30 **113.6** 13C-retinol isotope dilution test in a nonhuman primate model of vitamin A toxicity. **A.L. Escaron, K. Penniston, J.P. Mills, J. Howe and S.A. Tanumihardjo.** Univ. of Wisconsin-Madison.

4:45 **113.7** Estimated level of daily vitamin A intake required to maintain a constant total body vitamin A pool size in adult males with either small or large initial total body vitamin A pool sizes. **M.J. Haskell, K.M. Jamil, N.K. Das, J.M. Peerson, M.A. Wahed and K.H. Brown.** Univ. of California-Davis and ICDDR,B, Dhaka, Bangladesh.

114. NUTRIENT-GENE INTERACTIONS I

Minisymposium

SUN. 3:00 PM—CONVENTION CENTER, ROOM 152A

CHAIRED: *M. NAKAMURA*

COCHAIRED: *M.D. KNUTSON*

3:00 Chair's introduction.

3:05 **114.1** Dietary flaxseed reverses radiation-induced alterations of gene expression in murine lungs. **J.C. Lee, S. Kanterakis, E. Arguiri, C.C. Solomides, K. Cengel and M. Christofidou-solomidou.** Univ. of Pennsylvania and Temple Univ.

3:20 **114.2** Altering in vivo levels of n-6 and n-3 fatty acids in humans modulates the expression of inflammatory genes. **K.L. Weaver, P. Ivester and F. Chilton.** Wake Forest Univ.

3:35 **114.3** Is soy estrogenic? Hepatic gene expression in the presence or absence of endogenous estrogen. **R. Singhal, K. Shankar, T.M. Badger and M.J.J. Ronis.** Univ. of Arkansas for Med. Sci.

3:50 **114.4** Estrogen induces the phosphatidylethanolamine N-methyltransferase gene in human and murine hepatocytes. **M.E. Resseguie, M. Niculescu, K-A. da Costa, T. Randall and S. Zeisel.** Univ. of North Carolina at Chapel Hill Sch. of Publ. Hlth. and Sch. of Med.

4:05 **114.5** Resveratrol, a polyphenolic antioxidant in red wine, is dose-dependent in delivering cardioprotection. **J.I. Dudley and D.K. Das.** Univ. of Connecticut Sch. of Med.

4:20 **114.6** Vitamin D-induced anti-cancer effects are blunted in Ki-RAS transformed human prostate epithelial cells. **Z. Zhang, P. Kovalenko, J. Li, D. Teegarden and J.C. Fleet.** Purdue Univ.

4:35 **114.7** Early endocytotic events associated with lactoferrin and its receptor in trophoblast cells. **V. Lopez and B. Lonnerdal.** Univ. of California-Davis.

4:50 **114.8** Nutrient stimulation of eIF4G phosphorylation, but not PKC is rapamycin sensitive in skeletal muscle. **T.C. Vary and C.J. Lynch.** Penn State Col. of Med.

115. MECHANISMS OF NUTRIENT MODULATION OF IMMUNE FUNCTION

Minisymposium

SUN. 3:00 PM—CONVENTION CENTER, ROOM 153

CHAIRED: *C. JOLLY*

COCHAIRED: *K. HOAG*

3:00 Chair's introduction.

3:15 **115.1** Immune development in mice fed diets complete in amino acids or lacking the essential amino acid leucine is regulated by the eIF2 kinase GCN2. **C.J. Aldrich, J.K. Cundiff, J.D. Beane, E.O. Aakhus, Y. Heo, J.M. Venard, B.J. McDaniel, P. Bunpo, G.S. Seetharamaiah, B. McGrath, D.R. Cavener and T.G. Anthony.** Indiana Univ. Sch. of Med.-Evansville and Penn State.

3:30 **115.2** Selenium deficiency alters intestinal diaphorase activity in mice infected with the intestinal parasitic worm *Heligmosomoides polygyrus*. **J.F. Urban, A. Smith, S. Botero, H. Dawson, R. Anthony, W. Gause and T. Shea-Donohue.** Beltsville Human Nutr. Res. Ctr.

3:45 **115.3** Glucose availability regulates thymocyte metabolism and survival. **S.G. Rudrappa and B.D. Humphrey.** Univ. of Maryland College Park.

4:00 **115.4** MHC class I antigen presentation is downregulated by polyunsaturated fatty acids. **S.R. Shaikh and M. Edidin.** Johns Hopkins Univ.

4:15 **115.5** Lack of GPAT1 enhances the pathology associated with coxsackievirus B3 infection in mice. **E.A. Karlsson, J.R. Merriman, R.A. Coleman and M.A. Beck.** Univ. of North Carolina at Chapel Hill Sch. of Publ. Hlth. .

4:30 **115.6** The loss of PPAR γ in immune cells abrogates the ability of abscisic acid to improve insulin sensitivity through a mechanism involving suppression of MCP-1 expression and macrophage infiltration into white adipose tissue. **A.J. Guri, R. Hontecillas, G. Ferrer, O. Casagran, U. Wankhade, A.M. Noble and J. Bassaganya-Riera.** Virginia Tech.

4:45 **115.7** Selective kinase response modulators, Rho-iso-alpha acids and tetrahydro-iso-alpha acids in inflammation and collagen-induced rheumatoid arthritis model in mice. **V.R. Konda, G. Darland, J. Bland and M.L. Tripp.** Metagenics/ MetaProteomics Res. Ctr., Gig Harbor, WA.

Pathology

116. LIVER PATHOBIOLOGY SYMPOSIUM: PATHOBIOLOGY OF ASH AND NASH

Symposium

SUN. 8:30 AM—CONVENTION CENTER, ROOM 140A

CHAIRED: *A.M. DIEHL AND S.P.S. MONGA*

Liver Pathology

8:30 Adiponectin and alcoholic fatty liver disease. **M. You.** Indiana Univ. Sch. of Med., Richard Roudebush VA Med. Ctr.

9:05 The pathogenesis of Mallory body formation in ASH and NASH: role of oxidative stress. **S.W. French.** Harbor-UCLA Med. Ctr.

9:40 Hepatoprotective effect of IL-6/STAT3 in alcoholic and nonalcoholic fatty liver diseases. **B. Gao.** NIAAA, NIH.

10:15 Mechanisms of hepatocellular injury and disease progression in NASH. **A.J. Sanyal.** Virginia Commonwealth Univ. Med. Ctr.

10:50 Fixing fatty livers. **A.M. Diehl.** Duke Univ. Med. Ctr.

117. INTRACELLULAR TRANSPORT IN VASCULAR CELLS

Symposium

(*Sponsored by:* ASIP and NAVBO)

SUN. 8:30 AM—CONVENTION CENTER, ROOM 144A/B

CHAIRED: *B.L. LANGILLE*

COCHAIRED: *A.I. GOTLIEB*

Vascular Biology

8:30 Shear-induced protein redistribution in endothelium. **B.L. Langille.** Toronto Gen. Res. Inst.

9:10 New connections for ICAM-1 signaling during leukocyte diapedesis. **F.W. Luscinskas.** Brigham and Women's Hosp.

9:50 Relationship between subcellular localization and function of microvascular smooth muscle signaling proteins: lessons from S1P signaling. **S-S. Bolz.** Univ. of Toronto.

10:30 Secretion and assembly of vascular extracellular matrix. **R.P. Mecham.** Washington Univ. Med. Sch.

118. FUNDING YOUR RESEARCH THROUGH ALTERNATIVE SOURCES

Workshop

(Supported by an educational grant from the FASEB Minority Access for Research Careers (MARC) Office)

(*Sponsored by:* ASIP Committee for Career Development, Women & Minorities)

SUN. 8:30 AM—CONVENTION CENTER, ROOM 149B

CHAIRED: *G.R. PASTERNACK AND T.L. SANDER*

Career Session

Public Policy Session

8:30 Surviving the drought — innovative approaches to research funding. **G.R. Pasternack.** Aqua Partners LLC, Baltimore.

8:50 The new landscape of research and commercial relationships. **J.A. Tarzian Sorensen.** Bilyan LLC, Baltimore.

9:10 Funding your research — a venture capitalist's perspective. **S.M. Sammutt.** Burrill & Co., Wynnewood, PA.

9:30 Healthy philanthropy: strategies and goals of private funding for biomedical science. **S.M. Fitzpatrick.** James S. McDonnell Fndn., St. Louis.

9:50 Shameless self promotion: raising research funds through a website. **R.E. Miller.** Johns Hopkins Univ.

10:10 Panel discussion with audience.

119. HCS/ASIP WORKSHOP: TISSUE BANKING AND SAMPLE PREPARATION

Workshop

(*Sponsored by:* ASIP, HCS and ISBER)

SUN. 8:30 AM—CONVENTION CENTER, ROOM 149A

CHAIRED: *G.J. GORDON*

COCHAIRED: *H.A.B. MULTHAUPT*

Histochemistry

8:30 Introduction. **G.J. Gordon.** Brigham and Women's Hosp., Harvard Med. Sch.

8:40 Regulatory aspects of tissue banking. **M.E. Sobel.** ASIP.

9:10 Logistics/information systems database issues. **W.G. Richards.** Harvard Med. Sch.

9:40 Pathologist perspective/quality control. **W.K. Funkhouser.** Univ. of North Carolina at Chapel Hill.

10:10 Example of a practical application of tissue banking: tissue arrays in biomedical research. **S.M. Hewitt.** NCI, NIH.

10:40 Sample preservation in blood based repositories. **K. Shea.** BBI Biotech, a Div. of Sera Care.

11:10 **119.1** NCI's first generation guidelines for biospecimen resources. **J. Vaught, J. Schneider, N. Lockhart, I. Fore, H. Moore, J. Gillespie, E. Scott, A. Barker and C. Carolyn.** NCI, NIH.

11:20 **119.2** Clinical pathogenetics prostate tissue relational database. **H.S. Erickson, J.W. Gillespie, J. Asante, J. Rodriguez-Canales, J.W. Josephson, G. Gannot, P.A. Pinto, W.M. Linehan, P.L. Choyke, R.F. Chuaqui, S.M. Hewitt and M.R. Emmert-Buck.** NCI, NIH, SAIC-Frederick Inc. and NCI-Frederick.

120. NEUROPATHOLOGY: MYELIN/INFLAMMATORY/ INFECTIOUS DISEASE OF NERVOUS SYSTEM

Minisymposium

(*Sponsored by:* AANP and ASIP)

SUN. 8:30 AM—CONVENTION CENTER, ROOM 144C

CHAIRED: *R. SOBEL*

COCHAIRED: *S. CROUL*

Neuropathology

8:30 **120.1** Monoclonal antibodies to myelin proteolipid protein epitopes recognize neurons in the developing human CNS. **R.A. Sobel, P. Jaju, M.J. Eaton and J.R. Hinojoza.** Stanford Univ. Sch. of Med., VA Hlth. Care Syst.

8:45 **120.2** Regulation of dendritic cell adhesion to human cerebral endothelium by endothelial cell adhesion molecules and their ligands. **A. Arjmandi, V. Wu, R. Prameya and K. Dorovini-Zis.** Univ. of British Columbia and Vancouver Gen. Hosp.

9:00 **120.3** A stem cell source for myelination in the adult brain. **S.M. Staugaitis, A. Chang, M.C. Smith, C. Wu, D. Agamanolis and B.D. Trapp.** Cleveland Clin. and Children's Hosp. Med. Ctr. of Akron.

9:15 **120.4** Neurogenesis in the chronic lesions of multiple sclerosis. **A. Chang, M.C. Smith, X. Yin, S.M. Staugaitis and B.D. Trapp.** Cleveland Clin.

9:30 **120.5** The junctional adhesion molecule-C is required for maintaining the integrity and function of myelinated peripheral nerves. **C. Scheiermann, P. Meda, R. Madani, P. Coffey, T. Salt, D. Caille, O. Howell, R. Reynolds, A. Lobrinus, M. Aurrand-Lions, R. Adams, B. Imhof and S. Nourshargh.** Fac. of Med., Imperial Col. London, CMU, Univ. of Geneva, University Col. London and Cancer Research UK, London.

9:45 **120.6** Interferon-alpha and -beta restrict polyomavirus JC replication in primary human fetal glial cells: implications for progressive multifocal leukoencephalopathy therapy. **S. Verma, J.K. Co, L. Sumibcay, U. Gurjav and V.R. Nerurkar.** Univ. of Hawaii.

10:00 **120.7** IL-10 protects the cerebral microcirculation from spirochetal injury. **D. Londoño, A. Marques and D. Cadavid.** UMDNJ-New Jersey Med. Sch. and NIAID, NIH,.

10:15 **120.8** Infection of mouse brain by HIV-1. **L.R. Sharer, M.J. Potash, J. Balderama, E. Hadas, A. Borjabad and D.J. Volsky.** UMDNJ-New Jersey Med. Sch. and St. Luke's-Roosevelt Hosp. Ctr., New York.

10:30 **120.9** Expression of CD45 isoforms in normal human CNS and in HIV-1 encephalitis. **M.A. Cosenza-Nashat, M-O. Kim, M-L. Zhao, H-S. Suh and S.C. Lee.** Borough of Manhattan Community Col. and Albert Einstein Col. of Med.

10:45 **120.10** *Spiroplasma* spp. isolated from rabbit ticks or TSE-affected brains induce spongiform encephalopathy in ruminants. **F.O. Bastian, D.E. Sanders, W.A. Forbes, S.D. Hagius, J.V. Walker, W.G. Henk and F.M. Enright.** LSU AgCtr. and LSU Sch. of Vet. Med.

11:00 **120.11** Development of a panel of microsatellite markers for the assessment of genetic structure in white-tailed deer in Northern Illinois and Southern Wisconsin. **A.C. Kelly, N. Mateus-Pinilla, T. Beissel, J. Diffendorfer, J. Killefer, J. Novakofski and P. Shelton.** Univ. of Illinois at Urbana-Champaign and Illinois Dept. of Natural Resources, Springfield.

121. VASCULAR BIOLOGY: VASCULAR SMOOTH MUSCLE CELL BIOLOGY

Minisymposium

(*Sponsored by:* NAVBO and ASIP)

SUN. 8:30 AM—CONVENTION CENTER, ROOM 159

CHAIRED: *M.W. MAJESKY*

COCHAIRED: *L. KHACHIGIAN*

Vascular Biology

8:30 **121.1** TGF-beta downregulates Notch3 to promote differentiation of smooth muscle cells. **B. Lilly and S. Kennard.** Med. Col. of Georgia.

8:45 **121.2** Vascular abnormalities revealed by Notch signaling-deficient vascular smooth muscle in mice. **A. Proweller, A.C. Wright, T. Wang, W. Pear and M.S. Parmacek.** Univ. of Pennsylvania.

9:00 **121.3** A role for FRNK, a selectively expressed inhibitor of focal adhesion kinase, in vascular growth and development. **R.L. Sayers, M. Rojas, J.E. Kylander, J.T. Parsons, C.P. Mack and J.M. Taylor.** Univ. of North Carolina at Chapel Hill and Univ. of Virginia.

9:15 **121.4** Prolyl hydroxylase-2 promotes growth factor-induced vascular smooth muscle cell proliferation by repressing HIF-1α expression. **D. Beasley, K. Schultz and V. Murthy.** Tufts-New England Med. Ctr.

11:15 **121.5** Sp1 is required for expression of KLF4 in phenotypically modulated smooth muscle cells. **R.A. Deaton, N. Pidkova and G.K. Owens.** Univ. of Virginia.

9:30 **121.6** Molecular mechanisms of cell cycle gene expression in vascular smooth muscle cells. **R. Malhotra and C. McNamara.** Univ. of Virginia.

9:45 **121.7** Signaling mechanism for discoidin domain receptor 1 mediated smooth muscle cell migration. **K.K. Lu and M.P. Bendeck.** Univ. of Toronto.

10:00 **121.8** Cytokine-induced expression of the p75 neurotrophin receptor (p75) in vascular smooth muscle cells (p75). **R. Kraemer, N. Novikov and B. Hempstead.** Weill Med. Col. of Cornell Univ.

10:15 **121.9** Blockers of $K_v1.3$ channel suppress smooth muscle response to injury and neointimal hyperplasia. **A. Cheong, P. Sukumar, B. Kumar, J. Li, A.J. Bingham, F. Zeng, C. Munsch, K.E. Porter, I.C. Wood and D.J. Beech.** Univ. of Leeds and Gen. Infirmary, Leeds.

10:30 **121.10** Sphingosine-1-phosphate-induced NAD(P)H oxidase activation in smooth muscle cell migration requires Gα12/13 protein-mediated phospholipase C activation. **M.G. Davies, E. Roztocil and S. Nicholl.** Univ. of Rochester.

10:45 **121.11** Yin Yang-1 inhibits intimal thickening by repressing p21WAF1/Cip1 transcription and p21WAF1/Cip1-Cdk4-cyclin d1 assembly. **L.M. Khachigian, F. Santiago, H. Ishii, S. Shafi, R. Khurana, P. Kanellakis, R. Bhindi, M. Ramirez, A. Bobik, J. Martin, C. Chesterman and I. Zachary.** Univ. of New South Wales, Australia, University Col. London and Baker Heart Res. Inst., Melbourne.

11:00 **121.12** The effects of freezing versus supercooling on the vascular smooth muscle cell. **M.T.G. Basco, W-K. Yiu, B.E. Sumpio and J.E. Aruny.** Yale Univ.

122. 7TH ANNUAL CAREER DEVELOPMENT PROGRAM & LUNCHEON: DANCING WITH JOURNALS: A GUIDE TO SUBMISSION AND REVIEW

Special Session

(Supported by an educational grant from Cadmus and the FASEB Minority Access to Research Careers (MARC) Office)

(*Sponsored by:* ASIP Committee for Career Development, Women & Minorities, the American Association of Anatomists, the American Association of Neuropathologists and the Histochemical Society)

SUN. 11:45 AM—RENAISSANCE HOTEL, RENAISSANCE WEST

CHAIRED: *L.A. DIPIETRO AND D.S. ZANDER*

Career Session

The Career Development Luncheon, "Dancing with Journals", offers a unique opportunity to gain an insider's view of how to get your work published. Editors-in-Chief of four successful scientific journals will share their insights into the processes of manuscript review and editorial decision-making. Following the editors' presentations, participants will have an opportunity to ask questions of the editors. There will also be time to become acquainted with other trainees and potential faculty mentors at other institutions.

Pre-registration is required for this session. A limited number of tickets will be available for purchase in the ASIP Office (Renaissance, Meeting Office B) on Saturday, April 28 from 3:00 pm - 5:00pm and Sunday, April 29 immediately preceding the luncheon.

123. MOLECULAR DETERMINANTS OF EPITHELIAL POLARITY

Symposium

SUN. 2:00 PM—CONVENTION CENTER, ROOM 140A

CHAIRED: *A. NUSRAT*

Epithelial Cell Biology

2:00 Introduction. **A. Nusrat.** Emory Univ.

2:10 Protein complexes that control cell polarity. **B.L. Margolis.** Univ. of Michigan.

4:50 Building an epithelium-PARS and polarity. **I.G. Macara.** Univ. of Virginia Sch. of Med.

3:30 Role of phosphatidylinositides in epithelial polarity. **K. Mostov.** UCSF.

4:10 Frizzled feedback loop function in planar cell polarity signaling. **J. Axelrod.** Stanford Univ.

124. NEW DEVELOPMENTS IN VASCULAR BIOLOGY

Symposium

(*Sponsored by:* ASIP and NAVBO)

SUN. 2:00 PM—CONVENTION CENTER, ROOM 144A/B

CHAIRED: *M.I. CYBULSKY AND M.A. SCHWARTZ*

Vascular Biology

2:00 Current views in lymphatic vasculature development. **G. Oliver.** St. Jude Children's Res. Hosp.

2:45 Flow-dependent endothelial vasoprotection: sorting out the circuitry. **G. Garcia-Cardena.** Harvard Med. Sch.

3:30 Hemodynamic regulation of endothelial cell phenotype in vitro models of early atherosclerosis. **B.R. Blackman.** Univ. of Virginia.

4:15 Integrins and extracellular matrix in the fluid shear stress response. **M.A. Schwartz.** Univ. of Virginia.

125. HEPATOBILIARY PATHOBIOLOGY I: LIVER STEM CELLS AND CANCER

Minisymposium

SUN. 2:00 PM—CONVENTION CENTER, ROOM 149B

CHAIRED: *H. ISOM*

COCHAIRED: *D. HIXSON*

Liver Pathology

2:00 **125.1** Identification of adult rat hepatic progenitor cells that can reconstitute the liver. **M. Yovchev, P. Grozdanov, H. Zhou, C. Guha and M. Dabeva.** Albert Einstein Col. of Med.

2:15 **125.2** Simultaneous engraftment of hepatocytes and endothelial cells in mitomycin C-treated Fischer rats. **D.C. Hixson, K.E. Brilliant and H. Callanan.** Rhode Island Hosp., Brown Univ. Med. Sch.

2:30 **125.3** Endothelial cell lines affect differentiation of hepatic progenitor cells. **M.H. Walkup, D.A. Gerber, P. Chandrasekaran, L. Samuelson and N. Wright.** Univ. of North Carolina at Chapel Hill.

2:45 **125.4** Wnt/β-catenin pathway is critical in hepatic oval cell activation in rats. **U. Apte, S. Cui, B. Liu, M. Thompson, G. Zeng, B. Cieply, D.B. Stolz and S.P.S. Monga.** Univ. of Pittsburgh Sch. of Med.

3:00 **125.5** Destruction of bile ducts by 4,4'-diaminodiphenylmethane does not block the small hepatocyte-like progenitor cell response in retrorsine-exposed rats. **D.H. Best and W.B. Coleman.** Univ. of North Carolina Sch. of Med.

3:15 **125.6** Role of HGF and EGF signaling in transdifferentiation of hepatocytes to biliary epithelium in organoid cultures. **P.B. Limaye, W.C. Bowen, J. Luo and G.K. Michalopoulos.** Univ. of Pittsburgh Sch. of Med.

3:30 **125.7** Bile duct obstruction is a potent promoter of intrahepatic cholangiocarcinoma growth and progression. **A.E. Sirica, Z. Zhang, T. Asano, X-N. Shen, D.J. Ward and A. Mahatme.** Virginia Commonwealth Univ. Sch. of Med.

3:45 **125.8** Liver-gender mosaicism and not androgen signaling correlates with hepatocellular carcinoma in male mice. **A.B. Rogers, E.J. Theve, Y. Feng and J.G. Fox.** MIT.

4:00 **125.9** Pegged for destruction: beta-catenin as a novel target of pegylated interferon. **M.D. Thompson, A. Micsenyi and S.P.S. Monga.** Univ. of Pittsburgh.

4:15 **125.10** Simultaneous inhibition of ErbB1 and ErbB2 signaling significantly enhances the growth suppression of rat and human cholangiocarcinoma cell lines. **Z. Zhang and A.E. Sirica.** Virginia Commonwealth Univ. Sch. of Med.

4:30 **125.11** The lamivudine-resistant mutation rtM204i and its effect on HBV replication in vitro. **H.C. Isom, R.A. Heipertz, Jr., T.G. Miller and C.M. Kelley.** Penn State Col. of Med.

4:45 **125.12** HNF-regulated epithelial differentiation in human liver diseases. **E.R. Ochoa, G. Alarcon, A.J. Demetris, M.A. Nalesnik, A. Walls and G.K. Michalopoulos.** Univ. of Pittsburgh and Univ. Hosp., Autonomous Univ. of Nuevo Leon, Mexico.

126. NEUROPATHOLOGY: ALZHEIMER'S DISEASE AND STROKE

Minisymposium

(*Sponsored by:* AANP and ASIP)

SUN. 2:00 PM—CONVENTION CENTER, ROOM 149A

CHAIRED: *R. MRAK AND C. HULETTE*

Neuropathology

2:00 **126.1** Arteriolar apoe expression is increased alzheimer disease cortex. **C.M. Hulette, J.F. Ervin, E. Steed, M.H. Szymanski, J. Burke and K. Welsh-Bohmer.** Duke Univ. Med. Ctr. and Bath Univ., UK.

2:15 **126.2** Cognitive impairment and dementia due to Alzheimer disease and cerebrovascular pathology in autopsied ACT study patients. **J.A. Sonnen, J.B. Leverenz, P.K. Crane, E.B. Larson and T.J. Montine.** Univ. of Washington, Harborview Med. Ctr. and Group Hlth. Cooperative, Seattle.

2:30 **126.3** Alzheimer-type neuropathological changes in morbidly obese elderly individuals. **R.E. Mrak.** Univ. of Arkansas for Med. Sci.

2:45 **126.4** The brain activity of heat shock transcription factor 1 is sub-optimal in estrogen- and upregulated in testosterone-treated heat-shocked rats: implications for Alzheimer's disease. **S.C. Papasozomenos and H. Papasozomenos.** Univ. of Texas-Houston Med. Sch., Hlth. Sci. Ctr..

3:00 **126.5** Lipoic acid and N-acetyl cysteine protect against mitochondrial-related oxidative stress in fibroblasts from Alzheimer disease patients. **G. Perry, P.I. Moreira, P.L.R. Harris, X. Zhu, M.S. Santos, C.R. Oliveira and M.A. Smith.** Col. of Sci., Univ. of Texas at San Antonio, Case Western Reserve Univ. and Univ. of Coimbra, Portugal.

3:15 **126.6** Mitochondrial autophagocytosis in Alzheimer disease. **G. Perry, P.I. Moreira, S.L. Siedlak, M.S. Santos, C.R. Oliveira, H. Fujioka, M. Tabaton, A. Nunomura, G. Aliev, L.I. Szweda and M.A. Smith.** Univ. of Texas at San Antonio, Case Western Reserve Univ., Univ. of Coimbra, Portugal, Univ. of Genoa, Asahikawa Med. Col., Japan and Oklahoma Med. Res. Ctr.

3:30 **126.7** Effect of passive immunotherapy on the rate of progression of cerebral amyloid angiopathy in transgenic mice. **M.P. Frosch, C.M. Prada, R.A. Betensky, M. Garcia-Alloza, S.M. Greenberg and B.J. Bacskai.** Massachusetts Gen. Hosp., Charlestown and Boston and Harvard Sch. of Publ. Hlth.

3:45 **126.8** Refining MALDI-mass spectrometry for identification of proteins from murine brain sections. **D.C. Miller, J. Fitzgerald, S. Monemian and P.H. Pevsner.** NYU Sch. of Med.

4:00 **126.9** The vascular brain injury scoring sheet. **C. Zarow, H.V. Vinters, W.G. Ellis and H.C. Chui.** USC/Rancho Los Amigos Natl. Rehab. Ctr. , UCLA and Univ. California-Davis and USC.

127. NEUROPATHOLOGY: DEVELOPMENTAL/ PEDIATRIC NEUROPATHOLOGY

Minisymposium

(*Sponsored by:* AANP and ASIP)

SUN. 2:00 PM—CONVENTION CENTER, ROOM 144C

CHAIRED: *J. GOLDEN AND R. FOLKERTH*

Neuropathology

2:00 **127.1** Heterogeneous patterns of axonal injury in periventricular leukomalacia. **R.L. Haynes, S.S. Billiard, N.S. Borenstein, J.J. Volpe and H.C. Kinney.** Children's Hosp. Boston.

2:15 **127.2** The complex development of the human fetal and infant subplate. **P. Ligam, S.S. Billiards, S.E. Andiman, J.J. Volpe, H.C. Kinney and R.D. Folkerth.** Children's Hosp., Harvard Med. Sch.

2:30 **127.3** Periventricular leukomalacia is associated with increased major histocompatibility complex class II-positive microglia. **S.E. Andiman, R.D. Folkerth, R.L. Haynes and S.S. Billiards.** Children's Hosp. Boston.

2:45 **127.4** Pathological subtypes of polymicrogyria and brain development. **A.R. Judkins, W.B. Dobyns and J.A. Golden.** Children's Hosp. of Philadelphia and Univ. of Chicago.

3:00 **127.5** Pax6-/- mice have a cell nonautonomous defect in nonradial interneuron migration. **P.P. Gopal and J.A. Golden.** Univ. of Pennsylvania Sch. of Med. and Children's Hosp. of Philadelphia.

3:15 **127.6** Ethanol inhibition of aspartyl-(asparaginyl)-β-hydroxylase: relevance to impaired neuronal migration in fetal alcohol syndrome. **J.J. Carter, S. Lahousse, N. Roper and S. de la Monte.** Brown Univ., NIEHS, NIH, Research Triangle Park and Rhode Island Hosp.

3:30 **127.7** Brain insulin or insulin-like growth factor depletion causes fetal alcohol syndrome-like neurodevelopmental abnormalities. **S. de la Monte, M. Tong, F.F. Ding, V. Luks and J. Wands.** Brown Univ.

3:45 **127.8** *POLG1* mutations in two children with seizures and progressive, fatal encephalopathy. **W. McDonald, T. Casey, T. Passe and F. Ritter.** United Hosp. – Pathol., Children's Hosps. and Clins., St. Paul Radiol. and Minnesota Epilepsy Gp., St Paul.

4:00 **127.9** The expanding clinical and pathologic spectrum of mitochondrial DNA polymerase gamma mutations. **M.A. Farrell, R. Howley, Y. Alderazi, F. Brett, J. Moroney and M. Raymond.** Beaumont Hosp., Dulblin.

4:15 **127.10** Mice lacking the transcriptional regulator Egr3 have nerve growth factor signaling defects and profound sympathetic dysautonomia. **L.E. Tudor, X. Gao and W.G. Tourtellotte.** Northwestern Univ., Chicago.

4:30 **127.11** Low affinity neurotrophin receptor (p75NTR) expression is regulated by early growth response transcriptional regulators. **X. Gao and W. Tourtellotte.** Feinberg Sch. of Med., Northwestern Univ.

4:45 **127.12** Vein of galen aneurysmal malformation associated with high output cardiac failure in three neonates. **R.K. Malhotra, L. Florez, D. White, S. Papasozomenos, M. Covinsky, M. Bhattacharjee and M. Wang.** Univ. of Texas-Houston Med. Sch., Baylor Col. of Med. and Texas Children's Hosp.

128. UNDERSTANDING CANCER FOR IMPROVED PROGNOSIS: ADVANCES IN TUMOR BIOLOGY

Minisymposium

SUN. 2:00 PM—CONVENTION CENTER, ROOM 159

CHAIRED: *M. HOENERHOFF*

COCHAIRED: *S. ANDO*

Neoplasia

2:00 **128.1** A multi-step model of pelvic serous carcinogenesis that originates in the distal fallopian tube from a novel precursor lesion. **Y. Lee, A. Miron, R. Drapkin, D.W. Kindelberger, E. Jarboe, A.K. Folkins, J. Carlson, F.D. McKeon and C.P. Crum.** Pochon Cha Univ., Republic of Korea, Dana Farber Cancer Inst., Brigham and Women's Hosp. and Harvard Med. Sch.

2:15 **128.2** The expression of γ-glutamyltransferase in cancer cells is a factor in genomic instability, progression and drug resistance. **A. Pompella, A. Corti, M. Franzini, S. Dominici and A. Paolicchi.** Univ. of Pisa Med. Sch.

2:30 **128.3** Identification of DNA sequence elements that direct CpG methylation of epigenetically-regulated genes. **A.G. Rivenbark and W.B. Coleman.** Univ. of North Carolina Sch. of Med.

2:45 **128.4** Demethylation of the E-cadherin promoter driven by hepatocytes allows for cell fate-determining signals in invasive breast cancer cells. **C.R. Shepard and A. Wells.** Univ. of Pittsburgh Sch. of Med.

3:00 **128.5** Evidences that leptin upregulates E-cadherin expression in breast cancer: effects on tumor growth and progression. **S. Ando', S. Catalano, M. Pellegrino, G. Bossi, I. Barone, S. Morales, C. Giordano, F. Giordano, V. Bartella, M.L. Panno and L. Mauro.** Univ. of Calabria, Italy and Regina Elena Cancer Inst., Rome.

3:15 **128.6** Reduced Rap1 signaling contributes to prostate cancer progression. **V.M. Henderson, M. Ali-Seyed, T.L. Genetta, H. Kitayama, M.E. Csete and C.S. Moreno.** Emory Univ. and Kyoto Univ. Grad. Sch. of Med.

3:30 **128.7** PECAM-1 and tumor metastasis. **H.M. DeLisser, G. Cao, M. Fehrenbach, P. Desprez, Y. Liu, D. Liggitt, A. Thor and R. Debs.** Univ. of Pennsylvania, California Pacific Med. Ctr. Res. Inst., San Francisco, Univ. of Washington and Univ. of Colorado at Denver and Hlth. Sci. Ctr., Aurora.

3:45 **128.8** DNA fragments in sera of patients with prostate cancer are biomarkers of disease but primarily do not originate from tumor cells. **J. Ellinger, K. Haan, P.J. Bastian, L.C. Heukamp, S. Mathews, F. Cubukluoz, P. Kahl, R. Buettner, S.C. Mueller and A. von Ruecker.** Univ. Hosp. Bonn.

4:00 **128.9** Decreased expression of Tgf-beta ligands and receptors correlates with an aberrant proliferative response to estrogen in a mouse model of Brca1-mutation-related breast cancer. **S. Assefnia, L.P. Jones, K.M. Torre and P.A. Furth.** Georgetown Univ.

4:15 **128.10** The polycomb group protein Bmi-1 collaborates with H-Ras to promote cellular proliferation and transformation of mammary epithelial cells in vitro, and development of poorly differentiated mammary tumors in vivo. **M.J. Hoenerhoff, S. Datta, G.P. Dimri, M.R. Simpson and J.E. Green.** NCI, NIH., Northwestern Univ. Feinberg Sch. of Med. and Robert H. Lurie Comprehen. Cancer Ctr., Evanston, IL .

4:30 **128.11** The impact of diet on differentiated breast tissue: how polarized cells may lose sense of direction in initial stages of cancer development. **L.S. Chaboub, K. Metcalf, E. Retseck, G. Chandramouly and S.A. Lelièvre.** Purdue Univ.

4:45 **128.12** Fibroblast growth receptor 3 regulates crypt stem cell morphogenesis through a β-catenin/Tcf-4 dependent signaling mechanism. **B.B. Brodrick, A. Vidrich, L. Bradley, J. Buzan, C. Ilo, K. Skaar and S.M. Cohn.** Univ. of Virginia Hlth. Syst.

129. ROUS-WHIPPLE AWARD LECTURE

SUN. 5:00 PM—CONVENTION CENTER, ROOM 144A/B

Inflammation

5:00 Introduction. **E.R. Unanue.** Washington Univ. Sch. of Med.

5:05 Genetics and pathogenesis of autoimmunity. **A.K. Abbas.** UCSF.

130. ASIP MEMBERSHIP BUSINESS MEETING & AWARDS PRESENTATION

Business Meeting

SUN. 6:00 PM—CONVENTION CENTER, ROOM 144A/B

CHAIRED: *P.M. HOWLEY*

131. ASIP AWARDS RECEPTION

Special Session

(*Sponsored by:* ASIP and the Intersociety Council on Pathology Information)

SUN. 7:00 PM—CONVENTION CENTER, 3RD FLOOR FOYER

Pharmacology

132. JULIUS AXELROD AWARD LECTURE

Sun. 8:15 am—Convention Center, Room 143A/B

Introduction: **J.E. Barrett.** Adolor Corp.

Speaker: **T.H. Joh.** Cornell Univ., Weill Med. Col.

Title: Phox and Nox and ROS in a Box of Dopaminergic Neurodegeneration: Roles of MMP-3

133. CANNABINOIDS AND ENDOCANNABINOIDS I: PAIN AND OBESITY

Symposium

(*Sponsored by:* The Division for Behavioral Pharmacology; the Division for Drug Discovery, Development and Regulatory Affairs; the Division for Neuropharmacology; and the Division for Systems and Integrative Pharmacology)

Sun. 9:30 am—Convention Center, Room 143C

Chaired: *A.H. Lichtman*

Cochaired: *J.L. Wiley*

9:30 Overview. **J.L. Wiley.** Virginia Commonwealth Univ.
9:40 Endocannabinoid modulation of pain and inflammation. **A.H. Lichtman.** Virginia Commonwealth Univ.
10:05 Discussion.
10:15 Elucidating the role of the endocannabinoid system in stress-induced analgesia. **A.G. Hohmann.** Univ. of Georgia.
10:40 Discussion.
10:50 Development of selective FAAH and MGL inhibitors to treat pain and psychiatric disorders. **D. Piomelli.** Univ. of California-Irvine.
11:15 Discussion.
11:25 Development of the CB1 receptor antagonist rimonabant for the treatment of obesity-associated metabolic syndrome. **G. Le Fur.** Sanofi-Aventi Paris.
11:50 Discussion.

134. HIGHER ORDER ORGANIZATION OF GPCR SIGNALING COMPONENTS: LIPID RAFTS AND MULTIMERIC PROTEIN COMPLEXES

Symposium

(*Sponsored by:* The Division for Molecular Pharmacology; the Division for Cardiovascular Pharmacology; the Division for Drug Discovery, Development and Regulatory Affiars; and the Division for Neuropharmacology)

Sun. 9:30 am—Convention Center, Room 140B

Chaired: *R.S. Ostrom*

9:30 Cyclic AMP compartmentalization; insights from calcium-sensitive adenylyl cyclases and key supporting players. **D.M. Cooper.** Univ. of Cambridge.
9:50 Discussion.
10:00 Localization of GPCR signaling components in caveolin-rich domains. **P.A. Insel.** UCSD.
10:20 Discussion.
10:30 Regulation of G protein signaling by cytoskeletal components and membrane microdomains. **M.M. Rasenick.** Univ. of Illinois at Chicago Col. of Med.
10:50 Discussion.
11:00 GPCR interactions with PDZ scaffolds. **R.A. Hall.** Emory Univ. Sch. of Med.
11:20 Discussion.
11:30 Reciprocal modulation of function between the D_1 and D_2 dopamine receptors and the Na^+/K^+-ATPase, a novel member of the dopamine receptor signalplex. **L.A. Hazelwood, R.B. Free, D.M. Cabrera, J. Neiman, S. Quinn and D.R. Sibley.** NINDS, NIH. **(568.10)**
11:40 Discussion.
11:45 Disruption of lipid rafts enhances coupling of G-proteins to nonraft-associated delta opioid receptors in HEK293 cells. **E.S. Levitt and J.R. Traynor.** Univ. of Michigan. **(570.6)**
11:55 Discussion.

135. PHARMACOGENOMICS: FRONTIERS TO THE FUTURE

Symposium

(*Sponsored by:* The Division for Clinical Pharmacology, Pharmacogenomics and Translational Medicine; the Division for Drug Metabolism; the Division for Toxicology; and the Division for Pharmacology Education)

Sun. 9:30 am—Convention Center, Room 143A/B

Chaired: *R.M. Long*

Cochaired: *R.M. Weinshilboum*

Pharmacogenomics

9:30 Introduction. **R.M. Long.** NIGMS, NIH.
9:35 Cytochrome P450 pharmacogenomics: molecular mechanisms. **M. Eichelbaum.** Dr. Margarete Fischer-Bosch Inst. for Clin. Pharm., Stuttgart.
10:00 Discussion.
10:05 Prioritites and standards in pharmacogenetics research. **D.B. Goldstein.** Duke Univ.
10:30 Discussion.
10:35 The future of anti-hypertensive pharmacogenetics. **D.K. Arnett.** Univ. of Alabama at Birmingham.
11:00 Discussion.
11:05 Genetically-modified animal models for pharmacogenomics research. **S.B. Liggett.** Univ. of Maryland Sch. of Med.
11:30 Discussion.
11:35 Platforms for pharmacogenomics research and clinical applications. **M.S. Phillips.** McGill Univ. and Genome Quebec Innov. Ctr.
12:00 Discussion.

136. NICOTINE MODULATES ADOLESCENT BRAIN PLASTICITY: MOLECULAR, NEUROCHEMICAL AND BEHAVIORAL CHANGES

Symposium

(*Sponsored by:* The Division for Neuropharmacology; the Division for Clinical Pharmacology, Pharmacogenomics, and Translational Medicine; and the Division for Systems and Integrative Pharmacology)

SUN. 9:30 AM—CONVENTION CENTER, ROOM 142

CHAIRED: *S.G. MATTA*

COCHAIRED: *B.M. SHARP AND F.M. LESLIE*

Developmental Pharmacology

9:30 Introduction. **S.G. Matta.** Univ. of Tennessee Hlth. Sci. Ctr.
9:35 Gestional nicotine exposure alters adolescent mesolimbic dopamine release and nicotinic receptor expression. **B.M. Sharp.** Univ. of Tennessee Hlth. Sci. Ctr.
10:00 Discussion.
10:05 Differential neuroadaptations to nicotine in adolescent and adult rats. **S. Izenwasser.** Univ. of Miami Sch. of Med.
10:25 Discussion.
10:30 Nicotine interaction with other drugs during sensitive developmental periods. **F.M. Leslie.** Univ. of California-Irvine.
10:55 Discussion.
11:00 Gestational comorbid exposure to nicotine and alcohol alters drug responsiveness in offspring. **S.G. Matta.** Univ. of Tennessee Hlth. Sci. Ctr.
11:20 Discussion.
11:25 Sex specific effects of gestational and adolescent exposure to tobacco smoke on auditory and visual attention in adolescents. **L.K. Jacobsen.** Yale Univ. Sch. of Med.
11:50 Discussion.
11:55 Concluding remarks.

137. TECHNOLOGY SERIES: NANOTECHNOLOGY IN DISEASE AND THERAPEUTICS

Symposium

(*Sponsored by:* The Division for Drug Discovery, Development, and Regulatory Affairs; and the Division for Toxicology)

SUN. 9:30 AM—CONVENTION CENTER, ROOM 141

CHAIRED: *S. SENGUPTA*

9:30 Chair's introduction.
9:35 Nanoparticle assemblies as quantitative molecular rulers and probes of conformational changes. **B.M. Reinhard.** Boston Univ.
9:55 Discussion.
10:05 Ligand design for controlling assemblies of biomolecules. **B. Bilgicer.** Harvard Univ.
10:25 Discussion.
10:35 BioMEMS and bionanotechnology: integrating life sciences and engineering at the micro and nanoscale. **R. Bashir.** Purdue Univ.
10:55 Discussion.
11:05 Nanotechnology in drug delivery systems. **S. Sengupta.** Harvard Med. Sch., Brigham and Women's Hosp.
11:25 Discussion.
11:35 Riboflavin enhances cellular accumulation of N-(2-hydroxypropyl)methacrylamide in breast cancer cells. **L.M. Bareford, A. Ray, A. Nan, H. Ghandehari and P.W. Swaan.** Univ. of Maryland Baltimore. **(572.4)**
11:50 Discussion.

138. DIVISION FOR PHARMACOLOGY EDUCATION PROGRAMMING: PHARMACOLOGICAL CHARACTERIZATION OF MODIFIED GENOTYPES: THE FUNDAMENTALS

Symposium

SUN. 9:30 AM—CONVENTION CENTER, ROOM 156

CHAIRED: *W.B. JEFFRIES*

9:30 Introduction. **W.B. Jeffries.** Creighton Univ. Sch. of Med.
9:35 Measurement of behavior modifications in genetically altered animals. **S.J. Enna.** Univ. of Kansas Med. Ctr.
10:05 Discussion.
10:10 Assessing cardiovascular phenotypes in the whole animal. **J.R. Haywood.** Michigan State Univ.
10:40 Discussion.
10:45 Measurement of drug metabolism and pharmacokinetics in genetically modified mice. **D.M. Grant.** Univ. of Toronto.
11:15 Discussion.
11:20 The use of transgenic animals in drug discovery. **B.F. Cox.** Abbott Labs.
11:50 Discussion.

139. TORALD SOLLMANN AWARD LECTURE

SUN. 1:30 PM—CONVENTION CENTER, ROOM 143A/B

Introduction: **E. Sanders-Bush.** Vanderbilt Univ. Sch. of Med.

Speaker: **S.P. Duckles.** Univ. of California-Irvine.

Title: A Career in Pharmacology: In Search of Beauty and Joy

140. CANNABINOIDS AND ENDOCANNABINOIDS II: RESPONSE TO PATHOGENIC PROCESSES

Symposium

(*Sponsored by:* The Division for Neuropharmacology and the Division for Behavioral Pharmacology)

SUN. 3:00 PM—CONVENTION CENTER, ROOM 143C

CHAIRED: *B.A. BAHR*

COCHAIRED: *S. MUKHOPADHYAY*

3:00 Activation of CB1 cannabinoid receptor: structural studies. **A. Makriyannis.** Northeastern Univ.
3:20 Discussion.
3:25 Behavioral and neurobiological significance of cannabinoid action. **S. Deadwyler.** Wake Forest Univ. Sch. of Med.
3:45 Discussion.
3:50 Endocannabinoid anandamide in neuroprotection and angiogenesis: interplay between CB_1R and anandamide receptor. **S. Mukhopadhyay.** North Carolina Central Univ.
4:10 Discussion.
4:15 The endocannabinoid system in neurodegenerative disorders: beneficial or noxious? **V. Di Marzo.** Inst. of Biomolec. Chem., Pozzuoli, Italy.
4:35 Discussion.
4:40 Cellular and functional protection through dual modulation of the endocannabinoid system. **B.A. Bahr.** Univ. of Connecticut.
5:00 Discussion.
5:05 Novel role of cannabinoid in the regulation of inflammation. **P. Nagarkatti.** Univ. of South Carolina Sch. of Med.
5:25 Discussion.

141. GENETIC REGULATIONS OF GPCR/G-PROTEIN/ ADENYLYL CYCLASE SIGNALING: IMPLICATION IN PATHOBIOLOGY AND THERAPEUTICS

Symposium

(*Sponsored by:* The Division for Clinical Pharmacology, Pharmacogenomics, and Translational Medicine; the Division for Cardiovascular Pharmacology; the Division for Drug Discovery, Development and Regulatory Affairs; the Division for Systems and Integrative Pharmacology)

SUN. 3:00 PM—CONVENTION CENTER, ROOM 143A/B

CHAIRED: *R.D. FELDMAN*

Pharmacogenomics

3:00 Chair's introduction.
3:05 Genetic variants of GPCRs linked to adenylyl cyclase activation. **P.A. Insel.** UCSD.
3:35 Discussion.
3:40 GRK genetic variants: pathophysiological implications. **P.A. Jose.** Georgetown Univ.
4:10 Discussion.
4:15 G-protein genetic variants. **W. Siffert.** Univ. of Essen.
4:45 Discussion.
4:50 Adenylyl cyclase genetic variants: physiological and pathophysiological implications. **R.D. Feldman.** Robarts Res. Inst., London, Canada.
5:20 General discussion.

142. PHARMACOGENOMICS 101: INCORPORATING THE CURRENT ISSUES INTO THE CURRICULUM

Symposium

(*Sponsored by:* The Division for Pharmacology Education)

SUN. 3:00 PM—CONVENTION CENTER, ROOM 208A/B

CHAIRED: *J.W. STRANDHOY*

Pharmacogenomics and Education Session

3:00 Introduction. **J.W. Strandhoy.** Wake Forest Univ. Sch. of Med.
3:10 Basic pharmacogenetics and molecular modeling. **R.B. Altman.** Stanford Univ. Med. Ctr.
3:35 Discussion.
3:40 Therapeutic implications of pharmacogenomics: an overview. **A.R. Shuldiner.** Univ. of Maryland Sch. of Med.
4:05 Discussion.
4:10 Ethical and legal implications of pharmacogenomics. **P.R. Wolpe.** Univ. of Pennsylvania Sch. of Med.
4:35 Discussion.
4:40 Incorporating pharmacogenomics into the professional and graduate curricula. **D.A. Brazeau.** Univ. of Buffalo, SUNY.
5:05 Discussion.
5:10 Panel discussion.

143. NO TIME TO BE "BAD TO THE BONE": OSTEOPOROSIS AND BONE RESEARCH IN 2007

Symposium

(*Sponsored by:* The Division for Systems and Integrative Pharmacology; and the Women in Pharmacology Committee)

SUN. 3:00 PM—CONVENTION CENTER, ROOM 142

CHAIRED: *H.U. BRYANT*

COCHAIRED: *L.K. NISENBAUM*

3:00 Introduction. **H.U. Bryant.** Eli Lilly and Co.
3:05 Current status of osteoporosis: the disease, and outlook. **K. Harper.** Eli Lilly and Co.
3:35 Discussion.
3:40 Important signal transduction pathways in the osteoblast. **P.H. Stern.** Northwestern Univ.
4:10 Discussion.
4:15 Effect of PTH on osteoblast differentiation. **N.C. Partridge.** UMDNJ-Robert W. Johnson Med. Sch.
4:45 Discussion.
4:50 Stromal cell differentiation and their role in the aging skeleton. **P.G. Robey.** NIDCR, NIH.
5:20 Discussion.

144. TOXICOLOGY OF NANOMATERIALS

Symposium

(*Sponsored by:* The Division for Toxicology; the Division for Cardiovascular Pharmacology; and the Division for Drug Discovery, Development, and Regulatory Affairs)

Sun. 3:00 pm—Convention Center, Room 141

Chaired: *N.A. Monteiro-Riviere*

Cochaired: *M.W. Fariss*

3:00 Chair's introduction.
3:05 Nanostructures and health — nanochemistry perspectives. **K.D. Ausman.** Oklahoma State Univ.
3:35 Discussion.
3:40 Dermal toxicity of nanomaterials. **N.A. Monteiro-Riviere.** North Carolina State Univ. Col. of Vet. Med.
4:10 Discussion.
4:15 Respiratory toxicity of single-walled carbon nanotubes. **A.A. Shvedova.** NIOSH, Morgantown, WV.
4:45 Discussion.
4:50 Peripheral microvascular effects of pulmonary exposure to ultrafine particles. **T.R. Nurkiewicz.** West Virginia Univ.
5:20 Discussion.

145. CARDIOVASCULAR GENE THERAPY

Symposium

(*Sponsored by:* The Division for Cardiovascular Pharmacology; the Division for Clinical Pharmacology, Pharmacogenomics and Translational Medicine; and the Division for Systems and Integrative Pharmacology)

Sun. 3:00 pm—Convention Center, Room 140B

Chaired: *P.L. Hermonat*

3:00 Introduction. **P.L. Hermonat.** Univ. of Arkansas for Med. Sci.
3:05 Cardiovascular gene therapy. **J.C. Glorioso.** Univ. of Pittsburgh Sch. of Med.
3:35 Discussion.
3:40 Gene therapy against atherosclerosis. **J.L. Mehta.** Univ. of Arkansas for Med. Sci.
4:10 Discussion.
4:15 Gene therapy for lung and cardiovascular disease. **A.L. Beaudet.** Baylor Col. of Med.
4:45 Discussion.
4:50 Adenylyl cyclase gene transfer in heart failure. **H.K. Hammond.** UCSD.
5:20 Discussion.

Physiology

146. CARL LUDWIG DISTINGUISHED LECTURESHIP OF THE APS NEURAL CONTOL AND AUTONOMIC REGULATION SECTION

Sun. 8:00 am—Convention Center, Room 146C

Speaker: **J.A. Armour.** Univ. of Montreal.

Title: The Little Brain on the Heart

147. ROBERT M. BERNE DISTINGUISHED LECTURESHIP OF THE APS CARDIOVASCULAR SECTION

Sun. 10:30 am—Convention Center, Ballroom B

Speaker: **W.C. Sessa.** Yale Univ. Sch. of Med.

Title: Regulation of Endothelial Nitric Oxide Synthase: Cell Biology to Function

148. SOLOMON A. BERSON DISTINGUISHED LECTURESHIP OF THE APS ENDOCRINOLOGY AND METABOLISM SECTION

Sun. 2:00 pm—Convention Center, Room 145A

Speaker: **R.D. Cone.** Oregon Hlth. & Sci. Univ.

Title: From Color to Calor: The Diverse Physiological Roles of the Melanocortin Peptides

149. JULIUS H. COMROE DISTINGUISHED LECTURESHIP OF THE APS RESPIRATION SECTION

Sun. 3:15 pm—Convention Center, Room 146C

Translational Physiology

Speaker: **B. Hogan.** Duke Univ. Med. Ctr.

Title: Genetic Regulation of Lung Development and Repair

150. MCS LANDIS AWARD LECTURE

Sun. 3:15 pm—Convention Center, Room 146B

151. HENRY PICKERING BOWDITCH MEMORIAL AWARD

Sun. 5:45 pm—Convention Center, Ballroom B

Ion Channels

Speaker: **J.D. Stockand.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio.

Title: New Insight into the Regulation of ENaC by Small G Proteins and Phosphatidylinositides

152. EMERGING INSIGHTS INTO THE PURINERGIC SIGNALING IN RENAL, PULMONARY AND MICROVASCULAR PHYSIOLOGY AND PATHOPHYSIOLOGY

Symposium

(*Sponsored by:* APS Renal Section)

SUN. 8:00 AM—CONVENTION CENTER, ROOM 147B

CHAIRED: *B.K. KISHORE AND E.W. INSCHO*

8:00 Autocrine regulation by locally released purinergics: physiology, pathophysiology, and translational implications. **E.M. Schwiebert.** Univ. of Alabama at Birmingham.
8:30 Modification of renal microvascular purinergic signaling in hypertension. **E.W. Inscho.** Med. Col. of Georgia.
9:00 The flow response in the renal tubule: a purinergic issue. **H. Praetorius.** Univ. of Aarhus, Denmark.
9:30 Interaction of purinergics with prostanoids and vasopressin in the collecting duct: physiology and pathophysiology. **B.K. Kishore.** VA Salt Lake City Hlth. Care Syst.

153. INTERRELATIONS BETWEEN TRANSCELLULAR ION TRANSPORT FUNCTION AND PARACELLULAR TIGHT JUNCTIONAL PROPERTIES IN LUNG EPITHELIAL AND ENDOTHELIAL BARRIERS

Symposium

(*Sponsored by:* APS Respiration Section)

SUN. 8:00 AM—CONVENTION CENTER, ROOM 145B

CHAIRED: *K-J. KIM AND S.A. LEWIS*

Ion Channels

8:00 Transepithelial and endothelial noise and impedance measurements: strengths and shortcomings. **W. Van Driessche.** KULeuven.
8:32 Transport and barrier functional changes in airway epithelia revealed by transepithelial impedance analysis. **R.J. Bridges.** Rosalind Franklin Univ. of Med. and Dent.
8:54 Transcellular ion transport function versus paracellular transport properties in stretch-induced alveolar epithelial injury. **S. Margulies.** Univ. of Pennsylvania Sch. of Engin. and Appl. Sci.
9:16 Cross-talk between transcellular and paracellular endothelial permeability pathways. **A.B. Malik.** Univ. of Illinois at Chicago.
9:33 Transport properties of transcellular and paracellular routes in primary cultured alveolar epithelial cell monolayers. **K. Kim.** USC Keck Sch. of Med.
9:55 General discussion.

154. LINKING MOLECULAR PROFILE TO PHYSIOLOGY

Symposium

SUN. 8:00 AM—CONVENTION CENTER, BALLROOM B

CHAIRED: *M. LIANG AND N.H. LEE*

8:00 TBA. **D. Nickerson.** Univ. of Washington.
8:30 Expression QTLs: tools for complex trait gene identification? **T.J. Aitman.** Imperial Col., London.
9:00 Network models from proteomic data. **M. Knepper.** NHLBI, NIH.
9:30 Protein interaction networks and metabolism. **P. Uetz.** The Inst. of Genomic Res., Rockville, MD.

155. MECHANOTRANSDUCTION MECHANISMS OF MUSCLE HYPERTROPHY: TRANSLATION FROM RODENT TO HUMAN STUDIES

Symposium

(*Sponsored by:* APS Environmental and Exercise Physiology Section)

SUN. 8:00 AM—CONVENTION CENTER, ROOM 145A

CHAIRED: *M.M. BAMMAN*

8:00 Myogenic signaling in skeletal muscle hypertrophy: results from animal studies. **G.R. Adams.** Univ. of California-Irvine.
8:30 Muscle growth and myonuclear addition: insight from animals. **G. Pavlath.** Emory Univ.
9:00 Load-mediated activation of the myogenic machinery in human muscle. **M.M. Bamman.** Univ. of Alabama at Birmingham.
9:30 Myonuclear addition and regenerative potential in human models. **F. Kadi.** Örebro Univ., Sweden.

156. PHARMACOGENOMICS OF ESTROGEN AND CARDIOVASCULAR DISEASE

Symposium

(*Sponsored by:* APS Cardiovascular Section)

SUN. 8:00 AM—CONVENTION CENTER, ROOM 146A

CHAIRED: *V.M. MILLER AND S.M. HARMAN*

Translational Physiology

8:00 Genomics of estrogen receptors and cardiovascular disease. **A.M. Shearman.** MIT.
8:30 Genomics of estrogen metabolism: applying discoveries from breast cancer to cardiovascular disease. **D.A. Flockhart.** Indiana Univ. Sch. of Med., Wishard Hosp.
9:00 Using genomics to understand outcomes of the HERS and WHI. **D. Herrington.** Wake Forest Univ. Sch. of Med.
9:30 Challenges for the basic scientist in development of pharmacogenomic evaluations. **L.J. Lesko.** FDA, Silver Spring, MD.

157. PHYSIOLOGICAL GENOMICS: FROM BENCH TO BEDSIDE

Symposium

(*Sponsored by:* APS Physiological Genomics Group)

SUN. 8:00 AM—CONVENTION CENTER, ROOM 154B

CHAIRED: *S.E. OLD AND M.R. DWINELL*

8:00 Physiological responses mediated by hypoxia-inducible factor 1 and their clinical implications. **G.L. Semenza.** Johns Hopkins Univ. Sch. of Med.

8:30 Physiogenomic resources for rat models of heart, lung and blood disorders. **N.H. Lee.** The Inst. for Genomic Res., Rockville, MD.

9:00 New mouse models for heart, lung, blood and sleep disorders. **K.L. Svenson.** The Jackson Lab, Bar Harbor, ME.

9:30 Translating animal models to the clinical spectrum. **A.E. Kwitek.** Med. Col. of Wisconsin.

158. PROTEIN *O*-LINKED *N*-ACETYLGLUCOSAMINE: NUTRIENT SENSOR AND MODULATOR OF CARDIOVASCULAR FUNCTION

Symposium

SUN. 8:00 AM—CONVENTION CENTER, ROOM 146B

CHAIRED: *A.J. DAVIDOFF AND A-M. SEYMOUR*

8:00 The role of *O*-GlcNAc in cellular regulation. **N. Zachara.** Johns Hopkins Univ. Sch. of Med.

8:42 Diabetic cardiomyopathy, hyperglycemia and enzymatic glycosylation. **W.H. Dillmann.** UCSD.

8:58 *O*-GlcNAc, insulin resistance and the complications of diabetes. **M.G. Buse.** Med. Univ. of South Carolina.

9:22 *O*-GlcNAc and protection of ischemic myocardium. **S.P. Jones.** Univ. of Louisville.

9:46 *O*-GlcNAc and the treatment of hemorrhagic shock. **J.C. Chatham.** Univ. of Alabama at Birmingham.

159. TRANSPORT-METABOLISM COUPLING THROUGH AMPK

Symposium

(*Sponsored by:* APS Cell and Molecular Physiology Section)

SUN. 8:00 AM—CONVENTION CENTER, ROOM 147A

CHAIRED: *K.R. HALLOWS AND A.A. MCDONOUGH*

Transorters

8:00 Regulation of CFTR and ENaC by AMPK. **K.R. Hallows.** Univ. of Pittsburgh Sch. of Med.

8:30 AMPK in the kidney and the regulation of NKCC. **D.A. Power.** Austin Hlth., Univ. of Melbourne.

9:00 Role of AMPK in the regulation of GI transport. **K.L. Madsen.** Univ. of Alberta.

9:30 AMPK regulation of GLUT4 trafficking in insulin-sensitive tissues. **G.D. Holman.** Univ. of Bath.

160. NEUROCARDIOLOGY — HOW A BIG HEART ENGAGED NEURAL COMPLEXITY AND OPENED OUR EYES

Minisymposium

(*Sponsored by:* APS Neural Control and Autonomic Regulation Section)

SUN. 9:00 AM—CONVENTION CENTER, ROOM 146C

CHAIRED: *J. ARDELL*

9:00 Nuances of a fiber splitter — baroreceptors meet cardiac afferents. **M.C. Andresen.** Oregon Hlth. & Sci. Univ.

9:15 Afferents to ganglia to neurons — oh my! And stories to tickle the imagination. **J.L. Seagard.** Med. Col. of Wisconsin.

9:30 Spinal heirarchy: two farm boys and three decades of friendship and collaboration. **R.D. Foreman.** Univ. of Oklahoma Hlth. Sci. Ctr.

9:45 Cardiac remodeling, a tale of two disciplines. **L.J. Dell'Italia.** Univ. of Alabama at Birmingham.

161. ALTERNATIVES TO ANIMAL EXPERIMENTATION REVISITED

Symposium

(*Sponsored by:* APS Animal Care and Experimentation Committee)

SUN. 10:30 AM—CONVENTION CENTER, ROOM 154B

CHAIRED: *L. TOTH*

Education Session

10:30 Alternatives revisited: an introduction. **L.A. Toth.** Southern Illinois Univ. Sch. of Med.

10:55 Role of mathematical modeling in animal research. **M. Knepper.** NHLBI, NIH.

11:20 Technological innovation and refinements in neuroscience. **S.M. Zola.** Emory Univ.

12:05 Innovation: optimal path to alternatives. **J.T. Bielitzki.** Inventure Holdings, Washington, DC.

162. CONNEXINS AND THE KIDNEY

Symposium

(*Sponsored by:* APS Renal Section)

SUN. 10:30 AM—CONVENTION CENTER, ROOM 146C

CHAIRED: *J. PETI-PETERDI AND K. WILLECKE*

10:30 Biological functions of gap junctional communication and connexin hemichannels: selected examples. **K. Willecke.** Univ. of Bonn.

11:00 Connexins of the afferent arteriole. **N-H. Holstein-Rathlou.** Univ. of Copenhagen.

11:30 Coordination of intercellular calcium signaling in juxtaglomerular and mesangial cells. **T. Oite.** Niigata Univ. Grad. Sch. of Med. and Dent. Sci.

12:00 Connexin hemichannels in the distal nephron. **J. Peti-Peterdi.** USC.

163. PPARγ: A NOVEL MOLECULAR TARGET IN LUNG DISEASE

Symposium

(*Sponsored by:* The American Federation for Medical Research)

SUN. 10:30 AM—CONVENTION CENTER, ROOM 146B

CHAIRED: *M. HART*

Translational Physiology

10:30 PPARγ in the pathogenesis of lung cancer: implications for therapy. **J. Roman.** Emory Univ.
11:00 The immunomodulatory role of PPARγ in alveolar macrophages. **R. Reddy.** Univ. of Michigan.
11:30 The anti-fibrogenic potential of PPARγ ligands in pulmonary fibrosis. **P. Sime.** Univ. of Rochester.
12:00 The role of PPARγ in pulmonary vascular disease. **M. Hart.** Emory Univ. and Atlanta VA Med. Ctr.

164. PUBLISHING 101: DOS AND DON'TS OF PUBLISHING IN APS JOURNALS

Symposium

(*Sponsored by:* APS Publications Committee)

SUN. 10:30 AM—CONVENTION CENTER, ROOM 154A

CHAIRED: *K.E. BARRETT*

10:30 Preparing your work for publication in APS journals. **K.E. Barrett.** UCSD Med. Ctr.
10:50 Submission, peer review, and production: current developments in scientific publishing. **M. Reich.** American Physiological Soc.
11:10 Ethical pitfalls in scientific publishing. **K.E. Barrett and M. Reich.** UCSD Med. Ctr. and APS.
11:30 Meet the editors panel. **A. Nasjletti and D. Brown.** Mass. Gen. Hosp. and New York Med. Col.

165. RESPIRATORY CONTROL IN INSECTS: INTEGRATION FROM THE GENE TO THE ORGANISM

Symposium

(*Sponsored by:* APS Comparative and Evolutionary Physiology Section)

SUN. 10:30 AM—CONVENTION CENTER, ROOM 147A

CHAIRED: *S. KIRKTON*

Oxidative Stress/Hypoxia

10:30 Genetic basis for hypoxia tolerance in *Drosophila melanogaster*. **G.G. Haddad.** UCSD.
11:00 Developmental responses to hypoxia in the insect tracheal system. **M. Krasnow.** Stanford Univ.
11:30 Spiracular control of tracheal gases in insects. **S. Hetz.** Humboldt Univ. Berlin.
12:00 Control of internal convection in beetles using active tracheal compression. **J. Socha.** Argonne Natl. Lab. and Univ. of Chicigao.

166. STEM CELLS IN PHYSIOLOGY AND DRUG DISCOVERY

Symposium

(*Sponsored by:* APS Liaison with Industry Committee)

SUN. 10:30 AM—CONVENTION CENTER, ROOM 145A

CHAIRED: *C. MONTROSE-RAFIZADEH AND B. HOGAN*

Translational Physiology

10:30 Stem cells and new medicines: unleashing the potential to realize the expectation. **T.E. Allsopp.** Stem Cell Sciences PLC, Edinburgh, UK.
11:00 Pharmacology applications for stem cells in drug discovery. **J. McNeish.** Pfizer Global R&D.
11:30 Manipulating stem cells physiology for neurodegenerative disease therapy. **A.T. Chuang.** GlaxoSmithKline, Essex, UK.
12:00 Protein C pathway in human endothelial progenitor cells isolated from cord blood. **S.B. Yan.** Eli Lilly and Co.

167. BREAKTHROUGHS IN PROTECTION OF THE ISCHEMIC HEART

Symposium

(*Sponsored by:* APS Cardiovascular Section)

SUN. 3:15 PM—CONVENTION CENTER, ROOM 147A

CHAIRED: *S.P. JONES*

COCHAIRED: *E. MURPHY*

Translational Physiology

3:15 Molecular identity of the mitochondrial permeability transition pore. **C.P. Baines.** Cincinnati Children's Hosp. Med. Ctr.
3:45 GSK-3β: a master regulator of cardioprotection. **E. Murphy.** NHLBI, NIH.
4:15 Inducible nitric oxide synthase: cardioprotective facet of an inflammatory enzyme. **A. Bhatnagar.** Univ. of Louisville.
4:45 ARC, an inhibitor of both the death receptor and mitochondrial apoptosis pathways. **R.N. Kitsis.** Albert Einstein Col. of Med.

168. INSULIN RESISTANCE AND THE CARDIOMETABOLIC SYNDROME: ADIPOSE TISSUE AND SKELETAL MUSCLE FACTORS

Symposium

(*Sponsored by:* APS Endocrinology and Metabolism Section)

SUN. 3:15 PM—CONVENTION CENTER, ROOM 145A

CHAIRED: *J.R. SOWERS AND C.S. STUMP*

Metabolic Abnormalities

3:15 Regional adiposity: does location matter? **M.D. Jensen.** Mayo Clin.
3:40 Intramuscular lipid metabolism, insulin action, and obesity. **J. Houmard.** East Carolina Univ.

4:05 Metabolic responses of skeletal muscle to contractile activity. **J. Thyfault.** Univ. of Missouri-Columbia.
4:25 Improving insulin sensitivity by inhibiting the renin-angiotensin system. **E.J. Henriksen.** Univ. of Arizona.
4:50 Skeletal muscle insulin resistance: role of inflammatory cytokines and reactive oxygen species. **Y. Wei.** Univ. of Missouri-Columbia, Hlth. Sci. Ctr.

169. NANOTECHNOLOGY, BIOLOGY, AND MEDICINE IN SEBM'S SECOND CENTURY

Symposium

(*Sponsored by:* The Society for Experimental Biology and Medicine)

SUN. 3:15 PM—CONVENTION CENTER, ROOM 147B

CHAIRED: *B.E. SOBEL AND C.A. BLAKE*

3:15 Engineered viruses for biomedical science. **M.G. Finn.** The Scripps Res. Inst.
3:45 Nanotechnology and cardiovascular surgery — an emerging therapeutic approach. **T. Gourlay.** Imperial Col. London, Hammersmith Hosp.
4:15 Biological structures of mesoscale systems. **S.G. Silgar.** Univ. of Illinois, Urbana.
4:45 Experimental biology and medicine in SEBM's second century. **S.R. Goodman.** Univ. of Texas at Dallas.

170. TEACHING ABOUT EVOLUTION IN A BIOMEDICAL CONTEXT

Symposium

SUN. 3:15 PM—CONVENTION CENTER, BALLROOM B

CHAIRED: *J. HARRISON*

Public Policy Session

Education Session

3:15 What and how to teach about evolution. **E. Scott.** Natl. Ctr. for Sci. Educ., Inc.
3:55 From sound science to public controversy: countering popular misconceptions about evolution. **L.M. Krauss.** Case Western Reserve Univ.
4:40 Why medicine needs evolution. **R. Nesse.** Univ. of Michigan.

171. CIRCADIAN RHYTHMS: FROM ANIMALS TO HUMANS

Featured Topic

(*Sponsored by:* APS Comparative and Evolutionary Physiology Section)

SUN. 8:00 AM—CONVENTION CENTER, ROOM 155

CHAIRED: *ROBERTO REFINETTI*

8:00 Introduction.
8:15 Sixty years of translational research in chronobiology. **F. Halberg.** Univ. of Minnesota.
9:00 Chemotherapy disrupts circadian core temperature rhythm. **L.A. Stephenson, T.J. Doherty, M.D. Coyne and M.A. Kolka.** U.S. Army Res. Inst. of Envrn. Med., Natick, MA, Sage Biomath, Bergheim, TX and Wellesley Col. **(620.1)**
9:15 The circadian protein clock is a sensor of myofilament cross-bridge activity in the z-disk of cardiac myocytes. **S. Boateng and L. Qi.** Univ. of Illinois at Chicago. **(620.2)**
9:30 Significant differences in novel and adapted circadian movement behavior in three parental and two ENU knockout inbred strains of rats. **T.R. Feroah, H.V. Forster, A. Merritt, M.R. Dwinell, C. Moreno-Quinn, A. Greene, H. Jacob, A.E. Kwitek and A. Cowley, Jr..** Med. Col. of Wisconsin and Zablocki VA Med. Ctr. **(620.3)**
9:45 Discussion.

172. EMERGING PROPERTIES AND CONCEPTS IN RESPIRATORY RHYTHM GENERATION

Featured Topic

(*Sponsored by:* APS Respiration Section)

SUN. 8:00 AM—CONVENTION CENTER, ROOM 154A

CHAIRED: *D.R. MCCRIMMON AND W.K. MILSOM*

8:00 Emerging concepts in lower vertebrate respiratory rhythm generation. **W.K. Milsom.** Univ. of British Columbia.
8:30 Emerging concepts in mammalian respiratory rhythm generation. **J.L. Feldman.** UCLA.
9:00 Modulation and reconfiguration of the pontomedullary respiratory network: a computational modeling study. **B.G. Lindsey, A. Ross, R. O'Connor, K.F. Morris, S.C. Nuding, L.S. Segers, R. Shannon, T.E. Dick, W.L. Dunin-Barkowski, J.M. Orem, I.C. Solomon and I.A. Rybak.** Univ. of South Florida, Case Western Reserve Univ., Russian Acad. of Sci., Moscow, Texas Tech Sch. of Med., SUNY at Stony Brook and Drexel Univ. Col. of Med. **(610.11)**
9:15 The 3-2-1 state respiratory rhythm generator hypothesis revealed by microsectioning, reduced extracellular chloride and alterations in arterial gas tensions in the in situ rat. **A.P.L. Abdala, H. Koizumi, I.A. Rybak, J.C. Smith and J.F.R. Paton.** Univ. of Bristol, Osaka Univ. Sch. of Dent., Drexel Univ. Sch. of Biomed. Engin.and NINDS, NIH. **(610.4)**
9:30 Diaphragmatic and respiratory neuronal activities during the restart of breathing after hypocapnic apnea. **J.M. Orem, J.J. Fraigne, A.T. Lovering and E.H. Vidruk.** Texas Tech Univ. Sch. of Med. and Univ. of Wisconsin Sch. of Med. and Publ. Hlth. **(610.9)**
9:45 Role of locus coeruleus neurons in central O_2 chemoreflex during development in *Rana catesbeiana*. **S. Fournier and R. Kinkead.** Laval Univ. Hosp. St. Francois d'Assise, Canada. **(610.10)**

NO SMOKING IN SESSION ROOMS, POSTER OR EXHIBIT AREA

173. EPITHELIAL ION CHANNELS

Featured Topic

(*Sponsored by:* APS Epithelial Trtansport Group)

SUN. 10:30 AM—CONVENTION CENTER, ROOM 145B

CHAIRED: *P. SNYDER AND E. CORMET-BOYAKA*

Ion Channels

10:30 Regulation of CFTR by serum- and glucocorticoid-inducible kinase (SGK1). **B.A. Stanton, M.C. Chapline, R. Thibodeau, P. Ryder, R.A. Frizzell and J.D. Sato.** Dartmouth Med. Sch., Mount Desert Island Biol. Lab., Salisbury Cove, ME and Univ. of Pittsburgh Med. Sch. **(606.12)**

10:45 Visualizing the CFTR and ENaC association in living cells. **B.K. Berdiev, E. Cormet-Boyaka, R. Oosterveld-Hut, A. Tousson, G.G. Kovacs, Y. Qadri, C. Fuller, G. Lukacs and D.J. Benos.** Univ. of Alabama at Birmingham, Ohio State Univ., Lambert Instruments, Turfweg, The Netherlands and Hosp. for Sick Children, Univ. of Toronto. **(606.13)**

11:00 Quantifying RhoA facilitated trafficking of ENaC to the plasma membrane with TIRF-FRAP. **O. Pochynyuk, A. Staruschenko, V. Bugaj, L. LaGrange and J.D. Stockand.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio. **(606.14)**

11:15 Cigarette smoke condensate inhibits expression of ENaC α-subunit in lung epithelial cells. **S. Chu, H. Xu and T.J. Ferro.** McGuire VA Med. Ctr. and Virginia Commonwealth Univ. **(606.21)**

11:30 Nedd4-2 isoforms polyubiquitinate individual ENaC subunits and reduce surface expression of the sodium channel. **N.S. Raikwar and C.P. Thomas.** Univ. of Iowa. **(772.12)**

11:45 Missorting to late endosome/lysosomes due to increased phosphorylation by protein kinase C and mono-ubiquitination of the aquaporin-2 mutant E258K might explain its role in dominant nephrogenic diabetes insipidus. **P.M.T. Deen, P.J.M. Savelkoul, E-J. Kamsteeg, G. Hendriks, I.B.M. Konings and P. van der Sluijs.** Radboud Univ. Nijmegen Med . Ctr. and Univ. of Utrecht Med. Ctr., The Netherlands. **(772.13)**

12:00 Aldosterone upregulates $K_{Ca}1.1$ (BK) channel-mediated colonic K^+ secretion. **M.V. Sorensen, J.E. Matos, M. Sausbier, P. Ruth, H.A. Praetorius and J. Leipziger.** Aarhus Univ., Denmark and Univ. of Tuebingen, Germany. **(772.14)**

12:15 Estrogen and progesterone differentially regulate UTP-stimulated anion secretion in endometrial epithelial cells by altering expression of P2Y receptors and basolateral K^+ channels. **M.L. Palmer, K.R. Schiller and S.M. O'Grady.** Univ. of Minnesota, St. Paul. **(772.15)**

174. GROWTH FACTORS, PROLIFERATION AND DIFFERENTIATION IN THE GASTROINTESTINAL SYSTEM

Featured Topic

(*Sponsored by:* APS Gastrointestinal and Liver Physiology Section)

SUN. 10:30 AM—CONVENTION CENTER, ROOM 147B

CHAIRED: *Y. ZAVROS*

COCHAIRED: *L.C. SAMUELSON*

10:30 SOCS proteins and trophic effect of growth hormone-regulated JAK-STAT pathways in the intestine. **P.K. Lund.** Univ. of North Carolina at Chapel Hill.

11:00 Role of epidermal growth factor receptor signaling in the pathogenesis of Menetrier's disease. **R.J. Coffey.** Vanderbilt Univ. Sch. of Med.

11:30 EGFR plays a pivotal role in the regulation of apoptosis in intestinal epithelial cells. **S. Bhattacharya, R.M. Ray and L.R. Johnson.** Univ. of Tennessee Hlth. Sci. Ctr. **(925.1)**

11:45 VEGF signaling promotes liver cyst growth in pkd2(WS25/-) mice. **C.R. Amura, K.S. Brodsky, R. Groff, N. Voelkel and R.B. Doctor.** Univ. of Colorado at Denver and Hlth. Sci. Ctr. **(925.2)**

12:00 JNK pathway is required for CCK induced pancreatic growth in a model for regeneration. **L. Guo and J.A. Williams.** Univ. of Michigan. **(925.3)**

12:15 Hypergastrinemia and hypertrophic gastritis in Hip1r-deficient mice. **R.N. Jain, A.A. Al-Menhali, T.M. Keeley, T.S. Ross, C.S. Chew and L.C. Samuelson.** Univ. of Michigan and Med. Col. of Georgia. **(925.4)**

175. NEURAL-GLIAL-VASCULAR COMMUNICATION IN THE BRAIN

Featured Topic

(*Sponsored by:* APS Central Nervous System Section)

SUN. 10:30 AM—CONVENTION CENTER, ROOM 155

CHAIRED: *J.A. FILOSA AND E. NEWMAN*

10:30 Conversations between glia, neurons and blood vessels in the retina. **E.A. Newman.** Univ. of Minnesota.

11:00 Potassium channels as sensors and transducers of neuronal activity. **J.A. Filosa.** Univ. of Cincinnati.

11:30 Nitric oxide not superoxide radicals mediate neurovascular coupling during NMDA receptor activation. **C. Iadecola, H. Girouard, P. Zhou, J. Anrather and G. Wang.** Weill Med. Col. of Cornell Univ. **(748.2)**

11:45 Functional hyperemia in whisker barrel cortex becomes dependent on pH after inhibition of nitric oxide and epoxyeicosatrienoic acid pathways. **X. Liu, D.R. Harder, R.J. Roman and R.C. Koehler.** Johns Hopkins Univ. Sch. of Med. and Med. Col. of Wisconsin. **(748.5)**

12:00 ATP release and hydrolysis contributes to pial arteriolar dilations elicited by neuronal activation. **H-L. Xu and D.A. Pelligrino.** Univ. of Illinois at Chicago. **(748.1)**

12:15 A novel role for P450 eicosanoids in the neurogenic control of cerebral blood flow. **J.J. Iliff, L.N. Close, N.R. Selden and N.J. Alkayed.** Oregon Hlth. & Sci. Univ. **(748.3)**

176. DIABETIC VASCULAR DISEASE: PATHOLOGY AND MECHANISMS

Featured Topic

(*Sponsored by:* APS Cardiovascular Section)

SUN. 3:15 PM—CONVENTION CENTER, ROOM 154B

CHAIRED: *K. CHITALEY*

3:15 Models and mechanisms of vascular disease in diabetes. **K. Chitaley.** Univ. of Washington.

3:45 Eutrophic structural remodeling of mesenteric resistance artery in type 2 diabetic mouse. **D.I. Palen and K. Matrougui.** LSU Hlth. Sci. Ctr., New Orleans. **(756.7)**

4:00 Impact of high fat diet and injury on carotid artery reactivity. **R.E. Gandley, K.G. Raman, J.R. Rohland, M.S. Zenati and E. Tzeng.** Magee Womens Res. Inst., Univ. of Pittsburgh Med. Ctr. **(747.4)**

4:15 Role of TNF-alpha in type II diabetes-induced endothelial dysfunction. **X. Gao, A. Picchi, W.M. Chilian and C. Zhang.** Texas A&M Univ. and LSU Hlth. Sci. Ctr., New Orleans. **(893.12)**

4:30 Loss of Akt1-mediated signal transduction in the vasculature is not sufficient to evoke systemic hypertension in mice. **J.D. Symons, S.L. McMillin, M.J. Birnbaum and E.D. Abel.** Univ. of Utah. **(737.14)**

4:45 Protective effect of PPARγ in the vascular wall: insight from mice expressing the P465L dominant negative mutation in PPARγ. **A.M. Beyer, C. Lynch, M.L. Modrick, C.M. Halabi, Y-S. Tsai, N. Maeda, C.D. Sigmund and F.M. Faraci.** Univ. of Iowa and Univ. of North Carolina at Chapel Hill. **(893.18)**

5:00 Impaired vascular function in transgenic mice with smooth muscle cell specific dominant negative hPPARγ expression. **C.M. Halabi, A.M. Beyer, H.L. Keen, W.J. De Lange, F.M. Faraci and C.D. Sigmund.** Univ. of Iowa. **(745.20)**

177. DONALD J. REIS MEMORIAL TRAINEE SYMPOSIUM

Featured Topic

(*Sponsored by:* APS Neural Control and Autonomic Regulation, Central Nervous System and Cardiovascular Sections)

SUN. 3:15 PM—CONVENTION CENTER, ROOM 145B

CHAIRED: *D. SCHEUER*

3:15 In honor of Donald J. Reis. **A. Sved.** Univ. of Pittsburgh.

3:45 Role of spinal serotonin in cold-evoked sympathetic activation of brown adipose tissue. **C.J. Madden and S.F. Morrison.** Oregon Hlth. & Sci. Univ. **(751.16)**

4:00 Chronic hypoxia alters α-adrenoreceptor modulation of synaptic transmission of peripheral chemoreceptor inputs in the NTS. **W. Zhang and S. Mifflin.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio. **(761.2)**

4:15 Role of Ca^{2+}-activated K^+ channels in 11,12-epoxyeicosatrienoic acid-induced vasodilation of parenchymal arterioles: possible role of astrocytes. **V.M. Blanco, J.E. Stern and J.A. Filosa.** Univ. of Cincinnati. **(748.4)**

4:30 Soluble epoxide inhibition provides neural and vascular protection against cerebral ischemia. **A.N. Simpkins, R.D. Rudic, S. Roy, B.D. Hammock and J.D. Imig.** Med. Col. of Georgia and Univ. of California-Davis. **(913.4)**

4:45 Caveolin-1 ablation induces functional K_{Ca} channel activation and attenuates the myogenic response in cerebral arteries. **A. Adebiyi, G. Zhao, S.Y. Cheranov, A. Ahmed and J.H. Jaggar.** Univ. of Tennessee Hlth. Sci. Ctr. **(599.20)**

5:00 Exercise improves vascular relaxation mediated by sGC/cGMP via inhibition of Rho-kinase signaling in eNOS -/- mice. **F. Priviero and R.C. Webb.** Med. Col. of Georgia. **(599.14)**

178. MUSCLE FATIGUE

Featured Topic

(*Sponsored by:* APS Muscle Biology Group)

SUN. 3:15 PM—CONVENTION CENTER, ROOM 154A

CHAIRED: *J-M. RENAUD*

COCHAIRED: *T. NOSEK*

3:15 Low frequency fatigue in limb skeletal muscle: an in situ model. **R.H. Fitts.** Marquette Univ.

3:55 Posttranslational modification of troponin-T influences muscle fatigue. **T.M. Nosek.** Case Western Reserve Univ.

4:30 Contractile dysfunction in K_{ATP} channel deficient muscle during fatigue involves Ca^{2+} influx and reactive oxygen species. **L. Gariépy, C. Cifelli, J-P. Bercier and J.M. Renaud.** Univ. of Ottawa. **(768.1)**

4:45 Enhanced muscle contractility and anti-fatigue proprieties of CordyMax5. **T. Zheng, C. Zhao, L. Gao, Y. Zhou, N. Tan, W. Chen and J-S. Zhu.** Pharmanex Beijing Pharmacol. Ctr. and Pharmanex Res. Inst., Provo, UT. **(768.4)**

5:00 The effect of induced alkalosis and prolonged submaximal cycling on central and peripheral control of maximal voluntary contraction of the knee extensors. **A.M. Hunter, C. Bolger and S. Galloway.** Univ. of Stirling, UK. **(768.5)**

179. OSMOREGULATORY SIGNALING

Featured Topic

(*Sponsored by:* APS Cell and Molecular Physiology Section)

SUN. 3:15 PM—CONVENTION CENTER, ROOM 155

CHAIRED: *M.B. BURG*

3:15 TBA. **B. Ko.** Chinese Univ. of Hong Kong.

3:45 Contribution of PLC-γ1 to activation by high NaCl of the osmoprotective transcription factor TonEBP/OREBP. **C.E. Irarrazabal, M.B. Burg, M. Schentz and J.D. Ferraris.** NHLBI, NIH. **(774.5)**

4:00 Rac1 and p38 contribute to signaling high NaCl-induced movement of tonicity enhanced binding protein from cytoplasm to nucleus. **P. Gallardo, M.B. Burg and J.D. Ferraris.** NHLBI, NIH. **(774.4)**

4:15 Osmotic cell shrinkage activates ezrin/radixin/moesin proteins: activation mechanisms and physiological implications. **M. Rasmussen, T. Alexander, B. Darborg, A. Kapus and S.F. Pedersen.** Univ. of Copenhagen and Hosp. for Sick Children and St. Michaels Hosp., Toronto. **(774.13)**

4:30 Inhibition of TtonEBP by SUMO (small ubiquitin-like modifers) modification. **J.A. Kim, S.W. Lim, M.S. Kwon, K.I. Kim, C.H. Chung and H.M. Kwon.** Univ. of Maryland Baltimore, Sook-Myung Univ., Republic of Korea and Seoul Natl. Univ. **(774.2)**

4:45 Role of the AP-1 factors, c-Fos and c-Jun, in high NaCl-induced activation of the osmoprotective transcription factor, TonEBP/OREBP. **M.A. Ely, C. Williams, M. Schnetz, M.B. Burg and J.D. Ferraris.** NHLBI, NIH. **(774.6)**

5:00 Identification of Gpdp5 as a glycerophosphocholine phosphodiesterase (GPC-PDE) involved in osmotic regulation of GPC. **M. Gallazzini, J.D. Ferraris and M.B. Burg.** NHLBI, NIH. **(774.9)**

180. GRADUATE STUDENT HIGHLIGHTS IN RESPIRATION PHYSIOLOGY

Poster Discussion

(*Sponsored by:* APS Respiration Section)

SUN. 4:15 PM—CONVENTION CENTER, ROOM 146C

CHAIRED: *S. MARGULIES AND J. NEUBAUER*

This session is based on a selection of papers presented during the regular poster sessions. The number preceeding the presentation title is the poster board number.

1 Mast cell tryptase may play a protective role in early inflammation in human small airway epithelial cells. **P. Rastogi and J. McHowat.** Saint Louis Univ. Sch. of Med. **(773.1)**

2 Chronic hypoxia and the influence of maturation on serotonergic contractility in ovine pulmonary arteries. **R. Goyal, W.J. Pearce, L.D. Longo and S.M. Wilson.** Univ. of Mississippi Sch. of Pharm. and Loma Linda Univ. **(939.3)**

3 NO-regulated negative feedback loop protects lung endothelial barrier function in hydrostatic stress. **J. Yin, H. Kuppe and W.M. Kuebler.** Charité, Med. Univ. Berlin and German Heart Inst., Berlin. **(894.2)**

4 Toll receptor regulation of innate immune function in human airway epithelial (Calu-3) cells. **T. Melkamu and S.M. O'Grady.** Univ. of Minnesota, St. Paul. **(773.4)**

5 Effect of mechanical forces on surfactant protein expression in alveolar lung epithelial cells. **M.J.L. Kent, S. Ghadiali, J. Marzillier and S. Perry.** Lehigh Univ. **(607.15)**

6 Activation of a chimeric soluble adenylyl cyclase reorganizes microtubules near the cell periphery sufficient to disrupt the endothelial cell barrier. **N. Prasain, M. Alexeyev and T. Stevens.** Univ. of South Alabama. **(977.11)**

7 The hsp90 inhibitor, radicicol, attenuates bacterial lipopolysaccharide-induced endothelial permeability. **A. Chatterjee, C. Sneed and J.D. Catravas.** Med. Col. of Georgia. **(977.5)**

8 EGFR stimulation promotes proliferation in human pulmonary microvascular endothelial cells. **I. Toby, L.G. Chicoine and L.D. Nelin.** Ohio State Univ. Col. of Med. and Publ. Hlth. and Columbus Children's Res. Inst. **(977.8)**

9 Amiloride-sensitive Na^+-channels are blocked by endothelial-derived NO in hydrostatic stress. **S.M. Kaestle and W.M. Kuebler.** Charité - Med. Univ. Berlin. **(608.1)**

10 Intermittent hypoxia increases Rho kinase-mediated myofilament Ca^{2+} sensitization in small pulmonary arteries. **J.B. Snow, N.L. Kanagy, B.R. Walker and T.C. Resta.** Univ. of New Mexico. **(979.5)**

11 Developmental changes in inspiratory network complexity and burst timing during gasping in urethane-anesthetized rat in vivo. **H.J. Yu, X. Chen and I.C. Solomon.** SUNY Stony Brook. **(611.10)**

12 NK1R expression in the caudal nucleus of the solitary tract during chronic hypoxia and chronic hypercapnia in the rat. **K.A. Wilkinson, J.A. Carr, Z. Fu and F.L. Powell.** UCSD. **(761.3)**

13 Inhibitory input from slowly-adapting lung receptors to retrotrapezoid nucleus chemoreceptors. **A.C. Takakura, T.S. Moreira, E. Colombari and P.G. Guyenet.** Univ. of Virginia and Fed. Univ. of São Paulo. **(761.6)**

14 Focal acidosis in the pre-Bötzinger complex of the awake goat increases respiratory frequency. **K.L. Krause, S. Davis, J.M. Bonis, L. Pan, B. Qian and H.V. Forster.** Med. Col. of Wisconsin, Marquette Univ. and Zablocki VA Hosp. **(761.15)**

15 Adenosine A2A receptors constrain phrenic long-term facilitation following acute intermittent hypoxia. **M. Hoffman, S. Mahamed, F. Golder and G.S. Mitchell.** Univ. of Wisconsin-Madison and Univ. of Pennsylvania. **(918.12)**

16 Serotonergic neurons of nucleus raphe magnus are involved in ventilatory (but not thermal) responses to Co_2 of rats. **M.B. Dias, L.H. Gargaglioni, L.O. Margatho, V.P. Navarro, J. Antunes-Rodrigues and L.G.S. Branco.** FMRP-USP, Ribeiro Preto, UNESP, Jaboticabas and FORP-USP, Ribeiro Preto, Brazil. **(761.9)**

17 Confocal fluorescent imaging of the interactions of cholinergic agonists with pulmonary neuroepithelial bodies using an in situ lung slice model. **I. Pintelon, I. De Proost, I. Brouns, F. Van Meir, J-P. Timmermans and D. Adriaensen.** Univ. of Antwerp, Belgium. **(761.19)**

18 Neonatal caffeine persistently increases breathing across sleep-wake states in freely-behaving adult rats. **G. Montandon, A. Bairam, R. Horner and R. Kinkead.** Laval Univ. Hosp. St. Francois d'Assise, Canada and Univ. of Toronto. **(981.6)**

19 Ventilatory consequences of acute and chronic exposure to nicotine. **C.M. Brundage, J.C. Buehner and B.E. Taylor.** Univ. of Alaska Fairbanks. **(981.8)**

20 Pacemaker currents contribute to respiratory rhythmogenesis differently in rodent hibernators and nonhibernators. **B.M. Gajda and W.K. Milsom.** Univ. of British Columbia. **(610.3)**

Physiology InFocus
Novel Technologies in Physiology and Medicine

181. NOVEL APPROACHES TO STRUCTURE-FUNCTION RELATIONS IN MEMBRANE TRANSPORT PROTEINS

Symposium

SUN. 3:15 PM—CONVENTION CENTER, ROOM 146A

CHAIRED: *C. MILLER*

Ion Channels

3:15 The new family of voltage-gated H^+ channels. **D. Clapham.** HHMI, Harvard Med. Sch.

3:45 Detection of electric fields in voltage-gated ion channels. **F. Bezanilla.** Univ. of Chicago.

4:15 Learning about channel gating from computations combined with yeast screens. **M. Grabe.** Univ. of Pittsburgh.

4:45 Proton translocation coupled to proton gradients in anthrax toxin channel. **A. Finkelstein.** Albert Einstein Col. of Med.

MONDAY, APRIL 30

Across Societies–Experimental Biology

182. PUBLIC POLICY SESSION: NIH AT THE CROSSROADS: HOW DIMINISHED FUNDS WILL IMPACT BIOMEDICAL RESEARCH AND WHAT SCIENTISTS CAN DO ABOUT IT

MON. 12:45 PM—CONVENTION CENTER, BALLROOM C

CHAIRED: *L.T. FURCHT*

Elias Zerhouni, M.D.
NIH Director

The Honorable John Porter
Hogan & Hartson
and former Chair of the U.S. House of Representatives
Labor/HHS Appropriations Subcommittee

Rep. Porter will provide a legislative overview of the FY 2008 outlook for the NIH and will discuss how scientists have an obligation as citizens to become politically active and aware and make suggestions for what needs to be done to make an impact on the NIH budget. Dr. Zerhouni will provide details on the current state of the NIH enterprise and offer projections based on the FY 2008 budget.

183. FASEB-MARC GENOMICS SYMPOSIUM AND POSTER SESSION – HEALTH DISPARITIES IN HIV AND AIDS: GENETIC AND THERAPEUTIC IMPLICATIONS

Symposium

(Supported by an educational grant from the National Institute of General Medical Sciences, National Institutes of Health (T36-GM-08637))

MON. 2:00 PM—RENAISSANCE HOTEL, GRAND BALLROOM SOUTH

Public Policy Session

Organizer: FASEB MARC Program Advisory Board

Sponsor: FASEB Career Resources and MARC Program Office.

Coordinators: **S. Ohia,** Univ. of Houston Col. Of Pharm.
E. Rosa-Molinar, Univ. of Puerto Rico, Rio Piedras Campus
K. Mack, Univ. of Maryland Eastern Shore
N. Laurie, .St. Jude Children's Res. Hosp.

Moderator: **S. Ohia,** Univ. of Houston Col. Of Pharm.

Keynote presentations:
Overview: **A. Fauci,** NIAID, NIH.
Genomics. **C. Winkler,** NCI, NIH.
Epidemiology. **J. Essien,** Univ. of Houston.
Neuro AIDS. **R.G. Gonzalez,** Massachusetts Gen. Hosp., Harvard Med. Sch.
Pediatrics. **P. Flyn,** CDC; St. Jude Children's Hosp.

Related Poster Session
Posters will be selected from the abstracts submitted to EB 2007 from students and postdoctoral fellows involved in research related to the genetic basis of HIV and AIDS and the treatment in diverse populations.

No Smoking
In Session Rooms, Poster or Exhibit Area

Anatomy

184. VASCULAR DEVELOPMENT, GROWTH AND ADAPTATIONS MINI-MEETING: VASCULAR ADAPTATIONS

Symposium

(*Sponsored by:* AAA and NAVBO)

MON. 8:00 AM—CONVENTION CENTER, ROOM 103A

CHAIRED: *R. TOMANEK*

8:00 Introduction.
8:05 **184.1** Exercise-induced angiogenesis and arteriogenesis. **R.L. Terjung and H.T. Yang.** Univ. of Missouri-Columbia.
8:35 Flow-mediated regulation of vascular remodeling. **W. Sessa.** Yale Univ. Sch. of Med.
9:05 **184.2** Mechanisms underlying coronary collateral growth. **W.M. Chilian and P. Rocic.** LSU Hlth. Sci. Ctr., New Orleans.
9:35 **184.3** Post-infarction angiogenesis and arteriogenesis. **R.J. Tomanek, E. Dedkov and W. Zheng.** Univ. of Iowa and New York Col. of Osteo. Med.

185. ANATOMY EDUCATION ROUNDTABLES

Panel Discussion

MON. 8:00 AM—CONVENTION CENTER, ROOM 103B

CHAIRED: *D. BOLENDER*

186. CELL MOTILITY AND BEHAVIOR

Platform

MON. 8:00 AM—CONVENTION CENTER, ROOM 156

CHAIRED: *P. KULESA*

8:00 **186.1** Cell behavior of wild-type and myosin II loss of function neural crest cells in the zebrafish hindbrain during the epithelial to mesenchymal transition. **M.C. Halloran, T. Langenberg and J.D. Berndt.** Univ. of Wisconsin-Madison.
8:15 **186.2** Analysis of cytLEK1 interaction with hook2. **K. Moynihan, R. Pooley, V. Soukoulis and D. Bader.** Vanderbilt Univ.
8:30 **186.3** Live time-lapse imaging of migrating neural crest cells reveals novel mechanisms that mediate the formation and differentiation of cells in the avian peripheral nervous system. **F. Lefcort, L. George, J. Kasemeier and P.M. Kulesa.** Montana State Univ. and Stowers Inst., Kansas City, KS.
8:45 **186.4** Functional gap junction hemichannels are generated in vivo during infectious enteric disease. **J.A. Guttman, A.E. Lin, Y. Li, C. Naus, A.W. Vogl and B.B. Finlay.** Univ. of British Columbia.
9:00 **186.5** Role of alpha-smooth muscle actin in myofibroblast formation and function. **J.J. Tomasek and C.J. Haaksma.** Univ. of Oklahoma Hlth. Sci. Ctr.
9:15 **186.6** Smooth muscle seeded natural collagen scaffolds for tissue-engineered blood vessels. **S.K. Yazdani, M. Machingal, B. Watts, Y.P.R. Jarajapu, M.E. Van Dyke and G.J. Christ.** Wake Forest Univ. Baptist Med. Ctr.
9:30 **186.7** Flagella structure in the LF4 mutant of *Chlamydomonas reinhardtii*. **B. Meek, N. Wilson and K. Pargeter.** Oklahoma State Univ. Ctr. for Hlth. Sci.
9:45 **186.8** An in vivo role for neuropilin-1 in cranial neural crest cell migration. **R. McLennan and P.M. Kulesa.** Stowers Inst. for Med. Res., Kansas City, MO.

187. BIOENGINEERING IN DEVELOPMENT AND DISEASE

Symposium

MON. 8:00 AM—CONVENTION CENTER, ROOM 158

CHAIRED: *J. POTTS*

8:00 Introduction.
8:05 **187.1** Differences in tissue remodeling potential of the aortic and pulmonary heart valve interstitial cells. **M.S. Sacks and W.D. Merryman.** Univ. of Pittsburgh.
8:30 Electrospinning in the fabrication of physiologcaly relevant tissue engineering scaffolds for dermal reconstruction. **D.G. Simpson.** Virginia Commonwealth Univ.
8:55 **187.2** Stem cells in vascular tissue engineering. **L.E. Niklason and Z. Gong.** Yale Univ.
9:20 **187.3** Retinal prosthetics for the restoration and preservation of vision. **M.T. Pardue, M.K. Kim, H-Y. Choi, A.E. Faulkner, G.Y. McLean and V.T. Ciavatta.** Atlanta VA Med. Ctr., Emory Univ. and Optobionics Corp., Palo Alto.
9:45 Discussion.

188. VASCULAR DEVELOPMENT, GROWTH AND ADAPTATIONS MINI-MEETING: VASCULAR DEVELOPMENT

Symposium

(*Sponsored by:* AAA and NAVBO)

MON. 10:30 AM—CONVENTION CENTER, ROOM 103A

CHAIRED: *T. MIKAWA*

10:30 Introduction.
10:35 **188.1** Physiological suppressors of vascular development. **T. Mikawa, J. Timmer, M. Bressan, D. Herzlinger and P. Davis.** UCSF and Weill Med. Col. of Cornell Univ.
11:00 **188.2** Role of extracellular matrix in vascular morphogenesis. **G.E. Davis, W. Koh, A. Sacharidou and K.E. Fisher.** Sch. of Med., Univ. of Missouri-Columbia.
11:25 **188.3** Apelin is a regulator of both angiogenesis and lymphangiogenesis. **P.A. Krieg and C.M. Cox.** Univ. of Arizona Col. of Med.
11:50 **188.4** The role of Flt-1 (VEGFR-1) in vascular morphogenesis. **V.L. Bautch, G. Zeng, J.B. Kearney, A. Nanney, C. Patterson and N.C. Kappas.** Univ. of North Carolina at Chapel Hill, Sch. of Med.
12:15 Discussion.

189. WALK-JOG-RUN: WHATEVER SWINGS YOUR GAIT

Symposium

MON. 10:30 AM—CONVENTION CENTER, ROOM 103B

CHAIRED: *D. BOLENDER*

COCHAIRED: *K. TOPP*

10:30 Introduction.
10:35 **189.1** Anatomy of normal human gait. **L.J. Rizzolo.** Yale Univ.
11:00 **189.2** Running: a threshold for injury. **I.S. Davis.** Univ. of Delaware.
11:25 **189.3** Gait analysis: techniques and recognition of abnormal gait. **F.E. Pollo.** Baylor Univ. Med. Ctr.
11:50 **189.4** Gait patterns characteristic of nervous system pathologies provide teaching opportunities in anatomy. **K.S. Topp.** UCSF.
12:15 Discussion.

190. AACBNC SYMPOSIUM: OLFACTORY NEUROBIOLOGY FROM MOLECULES TO NETWORKS

Symposium

MON. 10:30 AM—CONVENTION CENTER, ROOM 156

CHAIRED: *M. SHIPLEY*

10:30 Introduction.
10:35 **190.1** The role of sniffing in shaping the primary receptor code for odors. **M. Wachowiak.** Boston Univ.
11:00 **190.2** Glomeruli: dynamic portals into the olfactory brain. **M. Ennis, M.T. Shipley and A. Hayar.** Univ. of Tennessee Hlth. Sci. Ctr., Univ. of Maryland Sch. of Med. and Univ. of Arkansas for Med. Sci.
11:25 **190.3** The role of the olfactory bulb in processing sensory information. **B. Strowbridge.** Case Western Reserve Univ.
11:50 **190.4** Early olfactory computations and perception. **C. Linster.** Cornell Univ.
12:15 Discussion.

191. HARD MECHANICS OF SOFT TISSUE

Platform

MON. 10:30 AM—CONVENTION CENTER, ROOM 158

CHAIRED: *B. CRAELIUS AND G. SCHATTEMAN*

10:30 **191.1** The focal adhesion protein zyxin: regulator of arterial mechanics and structure. **M. Cattaruzza, A. Wojtowicz and M. Hecker.** Univ. of Heidelberg.
10:45 **191.2** Tissue mechanics during acupuncture and manual therapies. **D.I. Shreiber, M. Julias, A.W. Seneres, A. Madabhushi and H.M. Buettner.** Rutgers the State Univ. of New Jersey, Piscataway.
11:00 **191.3** Mechanical behaviors of thigh muscles during walking and running. **W. Craelius, D.A. Yungher, M.T. Wininger, J.B. Barr and A.J. Threlkeld.** Rutgers Univ., Piscataway and Creighton Univ.
11:15 **191.4** Chewing muscle architecture and bite size in lemurs. **J.M.G. Perry and A. Hartstone-Rose.** Duke Univ. Med. Ctr.
11:30 **191.5** Software for musculoskeletal biomechanics. **D.K. Pai, S. Sueda and Q. Wei.** Univ. of British Columbia and Rutgers Univ., Piscataway.
11:45 **191.6** Comparative anatomy of the felid masticatory system. **A. Hartstone-Rose and J.M.G. Perry.** Duke Univ. Med. Ctr.

192. MINORITY STUDENT WORKSHOP LUNCHEON

Workshop

MON. 11:30 AM—RENAISSANCE HOTEL, RENAISSANCE EAST

193. VASCULAR DEVELOPMENT, GROWTH AND ADAPTATIONS MINI-MEETING: VASCULAR STEM AND PROGENITOR CELLS

Symposium

(*Sponsored by:* AAA and NAVBO)

MON. 2:30 PM—CONVENTION CENTER, ROOM 103A

CHAIRED: *K. HIRSCHI*

COCHAIRED: *J. BISCHOFF*

2:30 Introduction.
2:35 **193.1** Origins of hematopoietic stem cells. **E. Dzierzak.** Erasmus Univ. Med. Ctr., The Netherlands.
3:05 **193.2** Redefining endothelial progenitor cells. **M.C. Yoder.** Indiana Univ. Sch. of Med.
3:35 Multipotent progenitor cells in the walls of human blood vessels. **B. Peault.** Univ. of Pittsburgh.
4:05 Specification and regulation of hemogenic endothelium. **K. Hirschi.** Baylor Col. of Med.

194. TEACHING INNOVATIONS I

Platform

MON. 2:30 PM—CONVENTION CENTER, ROOM 103B

CHAIRED: *WINESKI*

2:30 **194.1** Introduction to dissection: a computer-based program to improve time and efficiency in the dissection room. **L.E. Wineski, P. Riggins, C. May and R. Sealand.** Morehouse Sch. of Med.
2:45 **194.2** Multidimensional transformation of clinical imaging data for virtual reality learning objects. **R.B. Trelease and A. Rosset.** David Geffen Sch. of Med. at UCLA and Univ. Hosp. of Geneva.
3:00 **194.3** Anatatorium: a stereoscopic three-dimensional laboratory experience. **T.D. Wilson, Y. Ding, A.M. Vandenbogaard, N. Greven, P. Haase and M. Johnson.** Univ. of Western Ontario.
3:15 **194.4** Organ system anatomy and histology in a virtual reality environment. **R.L. Doolittle, P.A. Craig, K. Tower and M. Kowalski.** Rochester Inst. of Technol.

3:30 **194.5** Emergency anatomy: a new paradigm in teaching surface anatomy-applying principles used in emergency medicine procedures. **Y. Okuda, B. Nelson, J.S. Reidenberg, T. Walther and J.T. Laitman.** Mount Sinai Sch. of Med.
3:45 **194.6** UTHSCSA Virtual for medical embryology teaching. **K.S. Vogel.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio.
4:00 **194.7** Developing interactive microanatomy sessions in a systems-based curriculum. **J.M. McBride and R.L. Drake.** Cleveland Clin. Lerner Col. of Med.
4:15 **194.8** Back to future: the anatomic radiology clerkship at the Mount Sinai School of Medicine. **W. Simpson and J.T. Laitman.** Mount Sinai Sch. of Med.

195. AR SYMPOSIUM: IMAGING LIVING TISSUE VASCULATURE

Symposium

MON. 2:30 PM—CONVENTION CENTER, ROOM 156

CHAIRED: *M. WATANABE*

COCHAIRED: *K. ALBERTINE*

2:30 Introduction.
2:35 **195.1** Intracranial vascular imaging. **D.L. Parker.** Univ. of Utah.
3:00 **195.2** Live imaging of lymphatic development in the zebrafish embryo. **K. Yaniv, S. Isogai, D. Castranova and B.M. Weinstein.** NICHD, NIH.
3:25 **195.3** Rapid quantification of normal and abnormal blood and lymphatic vasculature. **P.A. Parsons-Wingerter, M.B. Vickerman, T.L. McKay, D.J. Gedeon, P.A. Keith, P.K. Kaiser, J.E. Sears, Q. Ebrahem, G. Karunamuni and M. Watanabe.** NASA Glenn Res. Ctr., Cleveland Clin. Fndn. and Case Western Reserve Univ. Sch. of Med.
3:50 **195.4** Optical coherence tomography: an emerging technology for functional imaging in embryonic cardiovasculature. **A.M. Davis, F. Rothenberg and J.A. Izatt.** Duke Univ. and Univ. of Cincinnati.
4:15 **195.5** Intravital imaging of liver function: moving beyond microcirculation. **J.J. Lemasters, T.P. Theruvath, V.K. Ramshesh and Z. Zhong.** Med. Univ. of South Carolina.

196. THE NEURAL CREST IN EVOLUTION AND DEVELOPMENT

Symposium

MON. 2:30 PM—CONVENTION CENTER, ROOM 158

CHAIRED: *T. FRANZ-ODENDAAL*

COCHAIRED: *B. HALL*

2:30 Introduction.
2:32 **196.1** Neural crest and evolution of the vertebrate body plan. **S. Kuratani.** Ctr. for Develop. Biol., RIKEN, Japan.
2:55 **196.2** Patterning of the cranial neural crest in evo-devo. **L. Olsson.** Friedrich Schiller Univ. Jena, Germany.
3:18 **196.3** Cardiac neural crest in evolution and development. **M.L. Kirby.** Duke Univ.
3:41 **196.4** Pathfinding by the trunk neural crest: the smart cell scenario. **C.A. Erickson.** Univ. of California-Davis.
4:04 **196.5** Mechanisms of cranial neural crest-mesoderm interactions. **D.M. Noden.** Cornell Univ. Col. of Vet. Med.
4:27 Conclusion.

197. C. J. HERRICK LECTURE: NEUROANATOMY

Award Lecture

MON. 5:00 PM—CONVENTION CENTER, ROOM 158

5:00 **197.1** Estrogen and synapses in the hippocampus. **C.S. Woolley.** Northwestern Univ.

198. AAA BUSINESS MEETING

MON. 6:00 PM—CONVENTION CENTER, ROOM 103B

199. STUDENT POSTERS AND RECEPTION

Poster Discussion

MON. 7:00 PM—CONVENTION CENTER, ROOM 103A

Biochemistry and Molecular Biology

200. ASBMB BUSINESS MEETING

MON. 7:30 AM—CONVENTION CENTER, ROOM 203A/B

Join us for breakfast and Society business.

201. FRITZ LIPMANN LECTURESHIP

Awards

MON. 8:30 AM—CONVENTION CENTER, BALLROOM C

8:30 Introductory remarks.
8:35 **201.1** PPARs: running around obesity. **R.M. Evans.** HHMI, Salk Inst.

202. THE ROLE OF DYNAMICS IN ENZYME CATALYSIS

Symposium

MON. 9:55 AM—CONVENTION CENTER, ROOM 207B

CHAIRED: *P. E. WRIGHT*

Enzymes - Mechanism and Design Meeting

9:55 Introductory remarks. **P.E. Wright.**
10:00 **202.1** The dynamic energy landscape of enzyme catalysis. **P.E. Wright, D.D. Boehr, D. McElheny and H.J. Dyson.** The Scripps Res. Inst.
10:30 Roles of two energetically coupled dynamic processes in the Vav guanine nucleotide exchange factor. **P. Li, I.R.S. Martins, G.K. Amarasinghe, B. Yu and M.K. Rosen.** Univ. of Texas Ssouthwestern Med. Ctr. and Univ. of Coimbra, Portugal. **(806.4)**
10:45 Linking protein dynamics to function. **J.P. Klinman.** Univ. of California-Berkeley. **(652.3)**
11:15 **202.2** Single molecule studies of enzyme dynamics and mechanisms. **G.G. Hammes.** Duke Univ.
11:45 **202.3** Dynamic personality of an enzyme studied by crystallography, NMR, computation and single molecule FRET. **D. Kern.** Brandeis Univ., HHMI.

203. EXTRACELLULAR MATRIX AT THE CELLULAR SCALE

Symposium

MON. 9:55 AM—CONVENTION CENTER, ROOM 202B

CHAIRED: *V. VOGEL*

Extracellular Matrix at Multiple Biological Scales Meeting

9:55 Introductory remarks. **V. Vogel.**
10:00 **203.1** Laminin matrix assembly and the mediation of epithelial differentiation. **P.D. Yurchenco, D-H. Yang, S. Li, Z-L. Chen and S. Strickland.** UMDNJ-Robert Wood Johnson Med. Sch. and Rockefeller Univ.
10:30 Bio-printing of living organized tissues using an inkjet technology. **T. Xu, W. Zhao, J-M. Zhu, A. Atala and J.J. Yoo.** Wake Forest Univ. Baptist Med. Ctr. . **(647.6)**
10:45 **203.2** Extracellular matrix degradation by invadopodia. **A. Weaver and E. Clark.** Vanderbilt Univ. Med. Ctr.
11:15 Fibroblasts in wound healing: transformation, integrin expression, motility and proliferation differences in syndecan-1 deficient mice. **R.A. Jurjus, Y. Liu, S. Pal-Ghosh, G. Tadvalkar and M-A. Stepp.** George Washington Univ. **(647.2)**
11:30 Development, characterization and cell-seeding of a novel biocompatible scaffold for tendon and ligament reconstruction. **P.W. Whitlock, T.L. Smith, J.S. Shilt, G.G. Poehling and M.E. Van Dyke.** Wake Forest Univ. Hlth. Sci. **(506.5)**
11:45 **203.3** Can mechanical force regulate the functional display of the extracellular matrix and initiate integrin activation? **V. Vogel.** ETH Zurich.

204. MAKING AND RE-MAKING DNA

Symposium

MON. 9:55 AM—CONVENTION CENTER, ROOM 206

CHAIRED: *L. BEESE*

From Genome to Epigenome - Modification and Repair Meeting

9:55 Introductory remarks. **L. Beese.**
10:00 Encounter of an intrahelical lesion by a DNA glycosylase. **G.L. Verdine.** Harvard Univ.
10:30 Damage site location by uracil DNA glycosylase involves short-range sliding and efficient DNA hopping. **R.H. Porecha and J.T. Stivers.** Johns Hopkins Univ. Sch. of Med. **(661.2)**
10:45 **204.1** Structure and function of Y family DNA polymerases. **G.C. Walker, D. Jarosz, S. Simon, L. Waters, S. D'Souza and M.E. Wiltrout.** MIT.
11:15 Interaction of *Escherichia coli* thioredoxin with the bacteriophage T7 polymerase, helicase/primase at the replication fork. **S. Ghosh, S.M. Hamdan and C.C. Richardson.** Harvard Med. Sch. **(663.2)**
11:30 Timing of *E. coli* pre-RC assembly is determined by two different growth rate-specific mechanisms. **A.C. Leonard, J.J-C. Torgue, D.T. Miller and J.E. Grimwade.** Florida Inst. of Technol. **(662.2)**
11:45 An integrated view of DNA polymerization and repair. **L. Beese.** Duke Univ. Med. Ctr.

No Smoking
In Session Rooms, Poster or Exhibit Area

205. MITOCHONDRIA IN HEALTH AND DISEASE

Symposium

Mon. 9:55 am—Convention Center, Room 207A

Chaired: *E. D. Abel*

Metabolism Meeting

9:55 Introductory remarks. **E.D. Abel.**

10:00 **205.1** Metabolic characterisation of PGC1b KO mice. **A.J. Vidal-Puig.** Univ. of Cambridge.

10:30 Purification and characterization of *Drosophila* taffazin: discovery of the first phospholipid transacylase. **A. Malhotra, Y. Xu, M. Ren and M. Schlame.** NYU Sch. of Med. **(668.1)**

10:45 **205.2** Dual role of the pro-apoptotic BAD in insulin secretion and β-cell survival. **N.N. Danial.** Dana-Farber Cancer Inst.

11:15 Dynamics of mitophagy during nutrient deprivation to hepatocytes. **I. Kim, N. Mizushima and J. Lemasters.** Univ. of North Carolina at Chapel Hill, Med. Univ. of South Carolina and Tokyo Med. and Dent. Univ. **(668.14)**

11:30 Genetic depletion of SirT2 augments cell survival after hypoxia-reoxygenation injury. **E.G. Lynn, C.J. McLeod and M.N. Sack.** NHLBI, NIH. **(668.3)**

11:45 **205.3** Insulin and growth factor regulation of cardiac mitochondria. **E.D. Abel.** Univ. of Utah Sch. of Med.

206. GENETIC DISEASES IN MINORITY POPULATIONS — SICKLE CELL ANEMIA

Symposium

Mon. 9:55 am—Convention Center, Room 209C

Chaired: *P. A. Ortiz*

Minority Affairs Committee Sponsored Symposium

9:55 Introductory remarks. **P.A. Ortiz.**

10:00 **206.1** Sickle cell trait—biochemical and clinical consequences. **S.N. Wolff.** Meharry Med. Col.

10:40 Correlation between the plasma level of von Willebrand factor and the severity of sickle cell disease. **A.O. Mohamed, N.E. Omer and M.M.H. Satti.** Univ. of El Imam El Mahdi and Univ. of Khartoum, Sudan. **(670.1)**

10:55 **206.2** Iron overload and sickle cell anemia: monitoring and treatment. **J.S. Hankins.** St. Jude Children's Res. Hosp.

11:35 **206.3** Beyond hemoglobin polymerization: multiple molecular mechanisms in sickle cell disease. **W.P. Winter.** Howard Univ.

207. MOLECULAR MECHANISMS AND PROTEIN BIOSYNTHESIS

Symposium

Mon. 9:55 am—Convention Center, Room 209A

Chaired: *R. Green*

Protein Synthesis, Folding and Turnover Meeting

9:55 Introductory remarks. **R. Green.**

10:00 **207.1** Insights from global studies of eukaryotic translation. **D. Herschlag.** Stanford Univ.

10:30 Molecular mechanism of the cSHMT IRES. **J. Fox, C. Woeller, C. Perry and P. Stover.** Cornell Univ. **(655.4)**

10:45 **207.2** Mechanisms of microRNA-mediated gene regulation. **T.W. Nilsen.** Case Western Reserve Univ.

11:15 Repressed eIF2B-epsilon expression delays tumor growth in transformed mouse embryonic fibroblasts.´ **J.W. Gallagher, N. Kubica, S.R. Kimball and L.S. Jefferson.** Penn State Col. of Med. **(655.12)**

11:30 Dexamethasone represses signaling through mammalian target of rapamycin in muscle cells by enhancing expression of REDD1. **S.R. Kimball, H. Wang, N. Kubica, L.W. Ellisen and L.S. Jefferson.** Penn State Col. of Med. and Harvard Med. Sch. **(655.11)**

11:45 **207.3** Catalysis and communication in two active sites of the ribosome. **R. Green.** Johns Hopkins Univ. Sch. of Med.

208. CELL CYCLE

Symposium

Mon. 9:55 am—Convention Center, Room 202A

Chaired: *R. Heald*

Signaling Pathways Controlling Cell Structure and Fate Meeting

9:55 Introductory remarks. **R. Heald.**

10:00 **208.1** The molecular logic of the centrosome duplication cycle. **B.M-F. Tsou and T. Stearns.** Stanford Univ.

10:30 Vimentin is a target of an O-GlcNAc/O-phosphate signaling complex at M phase. **C. Slawson and G.W. Hart.** Johns Hopkins Sch. of Med. **(632.1)**

10:45 **208.2** The Ipl1/Aurora protein kinase and Glc7 protein phosphatase regulate the metaphase to anaphase transition. **S. Biggins, C. Kotwaliwale, B. Pinsky and S. Buvelot.** Fred Hutchinson Cancer Res. Ctr.

11:15 An insoluble protein matrix is required for centrosome function. **X. Wang, P. Hergert, D. Crone and R. Palazzo.** Rensselaer Polytech Inst. and New York State Dept of Hlth., Albany. **(632.5)**

11:30 Dysregulation of Cdc25B in PDE3a-/- mice oocytes. **W. Shen and V.C. Manganiello.** NHLBI, NIH. **(632.3)**

11:45 **208.3** Mechanisms of mitotic spindle assembly and function. **R. Heald.** Univ. of California-Berkeley.

209. PUBLIC POLICY SESSION: NIH AT THE CROSSROADS: HOW DIMINISHED FUNDS WILL IMPACT BIOMEDICAL RESEARCH AND WHAT SCIENTISTS CAN DO ABOUT IT

Special Session

MON. 12:45 PM—CONVENTION CENTER, BALLROOM C

Elias Zerhouni, M.D.
NIH Director

The Honorable John Porter
Hogan & Hartson
and former Chair of the U.S. House of Representatives
Labor/HHS Appropriations Subcommittee

Rep. Porter will provide a legislative overview of the FY 2008 outlook for the NIH and will discuss how scientists have an obligation as citizens to become politically active and aware and make suggestions for what needs to be done to make an impact on the NIH budget. Dr. Zerhouni will provide details on the current state of the NIH enterprise and offer projections based on the FY 2008 budget.

210. ASBMB MEET THE SPEAKERS SERIES

Special Session

MON. 1:00 PM—CONVENTION CENTER, ASBMB LOUNGE

Meet the ASBMB Award Lecturers in an informal setting for discussion and networking. Check the ASBMB Lounge for the daily schedule.

211. CHEMICAL PROBES OF LIPID SYSTEMS

Symposium

MON. 3:30 PM—CONVENTION CENTER, ROOM 201

CHAIRED: *H. ROSEN*

Biochemistry and Signaling of Lipids Meeting

3:30 Introductory remarks. **H. Rosen.**
3:35 **211.1** Spatial analysis of lipid signalling in T lymphocytes. **D. Cantrell.** Univ. of Dundee, UK.
4:05 PI-3K differentially regulates protease activated receptor-mediated platelet activation in humans through Rap1. **M. Holinstat, W.J. Hudson, B. Voss and H.E. Hamm.** Vanderbilt Univ. Med. Ctr. **(625.3)**
4:20 **211.2** Signaling lipid control of biological barriers. **H. Rosen.** The Scripps Res. Inst.
4:50 The NADPH oxidae and PI 3-kinase: the role of p40phox. **S. Bissonnette, C. Glazier and M.B. Yaffe.** MIT. **(625.9)**
5:05 A new α-C-galactosylceramide analog: promotion of Th1-biased responses in human CD1d-reactive Vα24-invariant natural killer T cells. **R. Bittman, X. Lu, L. Song and L.S. Metelitsa.** Queens Col. of CUNY and Children's Hosp. of Los Angeles, Keck Sch. of Med., USC. **(625.15)**
5:20 **211.3** Mapping lipid networks in cancer by integrated proteomics and metabolomics. **B.F. Cravatt.** The Scripps Res. Inst.

212. ANTIBIOTICS FOR THE 21ST CENTURY

Symposium

MON. 3:30 PM—CONVENTION CENTER, ROOM 202A

CHAIRED: *F. ROMESBERG*

Chemical Biology Meeting

3:30 Introductory remarks. **F. Romesberg.**
3:35 **212.1** Anti-virulence appraoches to antimicrobial therapy. **D.T. Hung.** Harvard Med. Sch.
4:10 Role of polyphosphates in enhancing survival after DNA damage in *Escherichia coli*. **C.L. Haakenson and E. Crooke.** Georgetown Univ. Med. Ctr. **(640.3)**
4:25 **212.2** Bacterial proteolytic machinery unleashed by acyldepsipeptide antibiotics. **H. Broetz-Oesterhelt, D. Beyer, H-P. Kroll, W. Schroeder, B. Hinzen, H. Paulsen, S. Raddatz, J.E. Bandow, H. Ruebsamen-Waigmann, H-G. Sahl and H. Labischinski.** AiCuris, Wuppertal, Bayer Healthcare, Wuppertal, Univ. of Greifswald and Inst. for Med. Microbiol., Bonn, Germany.
5:00 The kinetic studies of saFabI, the enoyl ACP reductase from *Staphylococcus aureus*. **H. Xu, T. Sullivan, T. Kirikae and P.J. Tonge.** Stony Brook Univ. and Intl. Med. Ctr. of Japan, Tokyo. **(790.9)**
5:15 **212.3** The evolution of antibiotic resistance. **F. Romesberg.** The Scripps Res. Inst.

213. CHROMOSOME DUPLICATION AND COHESION

Symposium

MON. 3:30 PM—CONVENTION CENTER, ROOM 206

CHAIRED: *J-M. PETERS*

The Chromosome Cycle Meeting

3:30 Introductory remarks. **J-M. Peters.**
3:35 **213.1** Mechanism of pre-RC-dependent cohesin loading in *Xenopus* egg extracts. **J.C. Walter, T.S. Takahashi, V.P. Bermudez and J. Hurwitz.** Harvard Med. Sch. and Mem. Sloan-Kettering Cancer Ctr.
4:05 The APC/C inhibitor, Eemi1, is essential for prevention of re-replication. **A. Dutta and Y.J. Machida.** Univ. of Virginia. **(662.1)**
4:20 **213.2** DNA damage-induced sister chromatid cohesion. **C. Sjögren, K. Shirahige, C. Karlsson and L. Ström.** Karolinska Inst. and Tokyo Inst. of Technol.
4:50 The SMC5/6 complex maintains telomere length in ALT cancer cells through sumoylation of telomere-binding proteins. **P.R. Potts and H. Yu.** Univ. of Texas Southwestern Med. Ctr. **(659.1)**
5:05 Roles of the sister chromatid cohesion apparatus in gene expression and development. **D. Dorsett, Z. Misulovin and M. Gause.** Saint Louis Univ. Sch. of Med. **(658.1)**
5:20 **213.3** Regulation of sister chromatid cohesion in mammalian cells. **J-M. Peters.** Res. Inst. of Molec. Pathol., Vienna.

214. GRADUATE STUDENT/POSTDOCTORAL STARTING FACULTY TRANSITIONS

Symposium

MON. 3:30 PM—CONVENTION CENTER, ROOM 209C

CHAIRED: *P.R. CHITNIS*

Education and Professional Development Committee Sponsored Symposium

3:30 Introductory remarks. **P.R. Chitnis.**
3:35 **214.1** Launching your career: making the most of your postdoctoral experience. **A.L. Miller.** Univ. of Wisconsin-Madison.
4:20 **214.2** Gainfully employed: application preparation to navigating negotiations. **J.K. Bell.** Virginia Commonwealth Univ.
5:05 **214.3** Grants: a key ingredient for a successful academic career. **P.R. Chitnis.** Natl. Sci. Fndn.

215. CONFORMATIONAL TRANSITIONS AND PROTEIN AGGREGATION

Symposium

MON. 3:30 PM—CONVENTION CENTER, ROOM 207B

CHAIRED: *R. RIEK*

Macromolecular Structure and Dynamics Meeting

3:30 Introductory remarks. **R. Riek.**
3:35 **215.1** Structural investigations of ordered aggregates. **R. Riek.** Salk Inst.
4:05 Folding, unfolding, and fibril formation of human eye lens γC-crystallin. **Y. Wang, B-F. Liu, J.J. Liang and J.A. King.** MIT and Brigham and Women's Hosp., Harvard Med. Sch. **(648.3)**
4:20 **215.2** Amyloids and prions: structure, conformations and conformational transitions as seen by NMR. **B.H. Meier, R. Verel, M. Steinmetz, A.B. Siemer, S. Köneke, A. Lange, H. van Melckebeke, C. Wasmer and M. Ernst.** ETH Zurich and PSI, Villigen, Switzerland.
4:50 Effect of hydrophobicity score on stabilization by macromolecular crowding. **S. Kraft and E. Shell.** Berry Col., GA. **(648.4)**
5:05 Metastable configurations and nucleation of protein aggregation. **O.V. Tcherkasskaya.** Georgetown Univ. **(648.1)**
5:20 **215.3** Understanding and ameliorating age onset neurodegenerative diseases. **J.W. Kelly.** The Scripps Res. Inst.

216. MITOCHONDRIAL DYNAMICS

Symposium

MON. 3:30 PM—CONVENTION CENTER, ROOM 207A

CHAIRED: *J. NUNNARI*

Organelle Dynamics Meeting

3:30 Introductory remarks. **J. Nunnari.**
3:35 **216.1** Mitochondrial dynamics and neurodegeneration. **D.C. Chan, S.A. Detmer and H. Chen.** Caltech.
4:05 State of GTPase cycle dictates mobility and localization of large mitochondrial GTPases, Mfn1 and 2. **M.M. Cleland, S-W. Ryu, M. Karbowski and R.J. Youle.** NINDS, NIH, Johns Hopkins Univ. and Univ. of Maryland Biotechnol. Inst. **(665.1)**
4:20 **216.2** The molecular interrelationships between mitochondrial morphogenesis and apoptosis. **R.J. Youle.** NINDS, NIH.
4:50 cAMP-dependent protein kinase promotes mitochondrial import of the nuclear encoded NDUFS4 subunit of complex I. **S. Papa, D. De Rasmo, D. Panelli and A.M. Sardanelli.** Univ. of Bari and Italian Res. Council, Bari. **(665.3)**
5:05 Mitochondrial morphology is regulated by ring domain proteins. **A. Neutzner, M. Karbowski and R.J. Youle.** NINDS, NIH and Univ. of Maryland Baltimore. **(665.2)**
5:20 **216.3** The machines that divide and fuse mitochondria. **J. Nunnari.** Univ. of California-Davis.

217. RNA-BASED GENE REGULATION

Symposium

MON. 3:30 PM—CONVENTION CENTER, ROOM 209A

CHAIRED: *K. W. LYNCH*

RNA Meeting

3:30 Introductory remarks. **K.W. Lynch.**
3:35 **217.1** Alternative splicing as a mechanism for signal-induced gene regulation. **K.W. Lynch.** Univ. of Texas Southwestern Med. Ctr.
4:10 Alternative polyadenylation in human COX-2: trans-acting factors. **C.S. Lutz, T. Hall-Pogar, S. Liang and L.K. Hague.** UMDNJ-New Jersey Med. Sch. and Grad. Sch. of Biomed. Sci. **(515.7)**
4:25 **217.2** Nuclear retained RNAs regulating gene expression. **D.L. Spector.** Cold Spring Harbor Lab., NY.
5:00 Interaction between mRNA export, mRNA decay and translation in the yeast *Saccharomyces cerevisiae*. **I.J. Cajigas, P.M. Guzzardo, H. Krebber, M.F. Wilkinson and C.I. González.** Univ. of Puerto Rico, Phillips Univ. Marburg, Germany and Univ. of Texas M.D. Anderson Cancer Ctr. **(656.8)**
5:15 **217.3** CPEB-regulated translation: mechanisms and maladies. **J.D. Richter.** Univ. of Massachusetts Med. Sch.

218. MATHEMATICAL BIOLOGY

Symposium

MON. 3:30 PM—CONVENTION CENTER, ROOM 202B

CHAIRED: *V. QUARANTA*

Systems Biology Meeting

3:30 **218.1** Biological scales. **V. Quaranta.** Vanderbilt Univ. Med. Sch.
3:50 Dynamic topology of cell signaling networks. **R. Iyengar.** Mount Sinai Sch. of Med.
4:20 **218.2** How PAR proteins and a cortical actomyosin network conspire to polarize the worm egg. **E.M. Munro.** Univ. of Washington.
4:50 **218.3** A hybrid mathematical model of solid tumour growth: bridging the genotype to phenotype chasm. **A.R.A. Anderson.** Univ. of Dundee.
5:20 Dynamical modeling of cell growth, division and death. **J. Tyson.** VPI and State Univ.

219. SCIENTIFIC THEMATIC RECEPTIONS

Special Session

MON. 5:50 PM—CONVENTION CENTER, 2ND FLOOR FOYER

The ASBMB Annual Meeting has been divided into 13 scientific themes. At the conclusion of the afternoon scientific symposia on Monday and Tuesday, each scientific theme will host a reception. Attendees will have the opportunity to interact in an informal setting with invited speakers and colleagues. Monday's thematic receptions include: 1) Chromosome Cycle, 2) RNA, 3) Macromolecular Structure and Dynamics, 4) Chemical Biology, 5) Organelle Dynamics, and 6) Systems Biology

220. CAREER AND REGULAR RESEARCH GRANTS WORKSHOP AND GRADUATE/POSTDOCTORAL NETWORKING RECEPTION

MON. 6:00 PM—CONVENTION CENTER, ROOM 203A/B

Nutrition

221. BREASTFEEDING AND ATOPIC DISEASE

Symposium

(Supported by an educational grant from Breast Milk Society, Mead Johnson Laboratories, Wyeth Nutritionals, Nestle, USA)

MON. 8:00 AM—CONVENTION CENTER, ROOM 151A

CHAIRED: *A. WALKER*

8:00 Introduction. Overview. **A. Walker.** Harvard Med. Sch.
8:10 Does breast feeding protect against allergies: pros and con (clinical/epidemiologic studies). **R. Bergmann.** Humboldt Univ. ,Berlin.
8:35 Q&A.
8:40 Clinical studies, role of breastfeeding in the development of asthma and allergies. **M. Kramer.** McGill Univ. Sch. of Med.
9:05 Q&A.
9:10 Meta-analysis of clinical/epidemiologic studies in breast milk and allergy. **W. Oddy.** Curtin Univ. of Technol., Australia.
9:35 Q&A.
9:40 Mechanisms of breast milk protection against allergy. **A. Walker.** Harvard Med. Sch.
10:05 Q&A.

222. FOOD AND NUTRITION BOARD UPDATE: SEAFOOD, SCHOOLS, AND STATUS

Special Session

MON. 8:00 AM—CONVENTION CENTER, ROOM 152A

CHAIRED: *L. MEYERS*

223. INTERNATIONAL NUTRITION: PREGNANCY AND BEYOND

Minisymposium

MON. 8:00 AM—CONVENTION CENTER, BALLROOM A

CHAIRED: *A. STEIN*

COCHAIRED: *U. RAMAKRISHNAN*

8:00 **223.1** Pregnancy and lactation hinder growth and nutritional status of adolescent girls in rural Bangladesh. **J.H. Rah, A.A. Shamim, U.T. Arju, A.B. Labrique, M. Rashid, K.P. West and P. Christian.** Johns Hopkins Bloomberg Sch. of Publ. Hlth. and JiVitA Bangladesh Project, Rangpur.
8:15 **223.2** Supplementation with docosahexaenoic acid in women with gestational diabetes mellitus in Chile: benefit to glucose tolerance and plasma lipids. **C.J. Lammi-Keefe, C.G. Parodi, R. Foncea, L. Sobrevia, M. Gonzalez, E. Oyarzun, P. Garces, E. Nunez, A.M. Acosta, M. Caceres and J. Rozowski.** LSU and Pontifical Catholic Univ. Sch. of Med., Chile.
8:30 **223.3** Maternal prenatal zinc supplementation influences offspring growth during infancy in Peru. **L.L. Iannotti, N. Zavaleta and L. Caulfield.** Johns Hopkins Univ. Bloomberg Sch. of Publ. Hlth. and Nutr. Res. Inst., Lima, Peru.
8:45 **223.4** Impact of CARE-India's Integrated Nutrition and Health Program on breastfeeding practices in Andhra Pradesh and Uttar Pradesh states. **V. Singh, D.N. Chaudhery, V.K. Srivastava, Y. Li, S. Ahmed, L.E. Caulfield and M.L. Dreyfuss.** Johns Hopkins Bloomberg Sch. of Publ. Hlth., CARE-India, New Delhi and King George's Med. Univ., India.

9:00 **223.5** Prevalence and predictors of iron deficiency in exclusively breastfed infants at 6 months of age: comparison of data from 6 studies. **K.G. Dewey, Z. Yang, S. Adu-Afarwuah, K.H. Brown, C.M. Chaparro, R.J. Cohen, M. Domellof, O. Hernell, A.A. Lartey and B. Lonnerdal.** Univ. California-Davis, Umeå Univ., Sweden and Univ. of Ghana.

9:15 **223.6** Infant feeding practices and growth of infants and young children: a longitudinal study in rural Bangladesh. **K.K. Saha, E.A. Frongillo, D.S. Alam, S.E. Arifeen and K.M. Rasmussen.** Cornell Univ. and ICDDR,B, Dhaka, Bangladesh.

9:30 **223.7** A fat-based supplement containing essential fatty acids increased plasma α-linolenic acid and linear growth of Ghanaian infants. **S. Adu-Afarwuah, A. Lartey, K.H. Brown, S.H. Zlotkin, A. Briend and K.G. Dewey.** Univ California-Davis, Uni. of Ghana, Univ. of Toronto and Inst. of Develop. Res., Paris.

9:45 **223.8** Multi-micronutrient supplementation increases activity in Mexican children 8 to 12 months of age. **N.J. Aburto, M. Ramirez, R. Flores and L. Neufeld.** Natl. Inst. Of Publ. Hlth., Cuernavaca, Mexico, INCAP, Guatemala Cityand Emory Univ. Rollins Sch. of Publ. Hlth.

224. ENERGY AND MACRONUTRIENT METABOLISM II

Minisymposium

Mon. 8:00 am—Convention Center, Room 151B

Chaired: *J.A. Bush*

Cochaired: *W. Campbell*

8:00 **224.1** A high protein diet at the upper end of the acceptable macronutrient distribution range leads to kidney glomerular damage in normal female Sprague-Dawley rats. **A.P. Wakefield, J.D. House, M.R. Ogborn, H.A. Weiler and H.M. Aukema.** Univ. of Manitoba and McGill Univ. Sch. of Dietetics and Human Nutr.

8:15 **224.2** Does protein intake alter the precursors for synthesis of lactose and nonessential amino acids by the mammary glands of lactating mice? **K.M. Schoenberg, B.J. Bequette, E. Connor and S.L. Owens.** Univ. of Maryland College Park and USDA, Beltsville.

8:30 **224.3** Weight loss from moderate and low carbohydrate diets results in distinctive plasma ghrelin responses. **R.J. Wood, J.S. Volek, U. Vaishnav, I. Lofgren and M.L. Fernandez.** Univ. of Connecticut.

8:45 **224.4** No impact of ghrelin on adaptive hyperphagia in short bowel syndrome. **C.W. Compher, B.P. Kinosian and D.C. Metz.** Univ. of Pennsylvania Sch. of Nursing and Sch. of Med.

9:00 **224.5** Carbohydrate restriction reduces hepatic cholesterol accumulation and acyl CoA cholesteryl acyltransferase activity induced by high levels of dietary cholesterol. **M. Torres-Gonzalez, J.S. Volek, H.C. Freake and M.L. Fernandez.** Univ. of Connecticut.

9:15 **224.6** Gender alters the effects of palmitate and oleate on fat oxidation and energy expenditure. **C.L. Kien and J.Y. Bunn.** Univ. of Vermont.

9:30 **224.7** The effects of oral fat perception compared to fat ingestion on energy expenditure and appetite profile. **A.J.P.G. Smeets, M.P.G.M. Lejeune and M.S. Westerterp.** Maastricht Univ. and Wageningen Ctr. for Food Sci., The Netherlands .

225. DIETARY BIOACTIVE COMPOUNDS: CHRONIC DISEASE RISK REDUCTION I

Minisymposium

Mon. 8:00 am—Convention Center, Room 150A

Chaired: *N. Emenaker*

Cochaired: *T. Jalili*

8:00 **225.1** Almond consumption reduces oxidative DNA damage and lipid peroxidation in young male smokers. **X. Jia, C-Y. Chen, J.B. Blumberg and N. Li.** Chinese Ctr. for Dis. Control and Prevent. and USDA at Tufts Univ.

8:15 **225.2** Effect of frequency of dosing of plant sterols on plasma cholesterol levels and synthesis rate. **S.S. AbuMweis, P. Jones and A.H. Lichtenstein.** Sch. of Dietetics and Human Nutr., McGill Univ. and USDA at Tufts Univ.

8:30 **225.3** A standardized green tea formula lowers serum amyloid alpha and blood pressure. **M.P. Nantz, C.A. Rowe, A. Azeredo, L.E. Marano, J.F. Bukowski and S.S. Percival.** Univ. of Florida and Brigham and Women's Hosp., Harvard Med. Sch.

8:45 **225.4** Roasted licorice suppresses chronic high glucose-induced apoptosis and endothelial dysfunction. **Y-J. Choi, S.S. Lim, J-S. Choi, H-M. Kwon, S-W. Kang, J-Y. Bae and Y-H. Kang.** Hallym Univ., Republic of Korea.

9:00 **225.5** Inhibition of colonic cancer cell proliferation and COX2 by oats avenanthramides. **L. Nie, M. Wise, F.W. Collins and M. Meydani.** Tufts Univ., USDA, Madison, WI and Eastern Cereal and Oilseed Res. Ctr., Ottawa.

9:15 **225.6** Essential oil of *Plantago asiatica* upregulates the LDL receptor and represses the HMG CoAa reductase expression in vitro and in vivo. **M.J. Chung, K.H. Kim, K.W. Park, J.P. Baek, H-J. Jun and S-J. Lee.** Korea Univ.

9:30 **225.7** Anthocyanins: do they really prevent obesity? **R.L. Prior, X. Wu, T. Hager, A. Hager and L. Howard.** USDA, Little Rock and Univ. of Arkansas.

9:45 **225.8** Cherry-enriched diets reduce metabolic syndrome and oxidative stress in lean Dahl-SS rats. **E.M. Seymour, A.A.M. Singer, M.R. Bennink and S.F. Bolling.** Univ. of Michigan and Michigan State Univ.

226. WATER-SOLUBLE VITAMINS II

Minisymposium

Mon. 8:00 am—Convention Center, Room 150B

Chaired: *J. Zempleni*

Cochaired: *D. Mock*

8:00 Overview. Gene regulation by vitamin-dependent modifications of histones. **S.S. Wijeratne.** Univ. of Nebraska-Lincoln.

8:15 **226.1** Biotin status in pregnancy. **D.M. Mock, S.L. Stratton and N.I. Matthews-Mock.** Univ. of Arkansas for Med. Sci.

8:30 **226.2** Vitamin D supplementation maintains normal homocysteine metabolism in diabetic rats. **K.M. Nieman, M.K. Nieman and K.L. Schalinske.** Iowa State Univ.

9:00 **226.3** Vitamin C deficiency in a university teaching hospital. **R. Gan, S. Eintracht and L.J. Hoffer.** McGill Univ. and Jewish Gen. Hosp., Montreal.

9:15 **226.4** Vitamin C status is inversely related to body mass and fat mass in lean, physically fit adults. **J.H. Stern, C.S. Johnston, C.J. Huck and P.D. Swan.** Arizona State Univ.
9:30 **226.5** Trends in blood folate levels in the United States, 1988-2004. **C.M. Pfeiffer, C.L. Johnson, R.B. Jain, E.A. Yetley, M.F. Picciano, J.I. Rader, K.D. Fisher, J. Mulinare and J.D. Osterloh.** Ctrs. for Dis. Control and Prevent., Atlanta and Hyattsville, NIH, Rockville and FDA, College Park, MD.
9:45 **226.6** Unmetabolized folic acid in plasma: effect of folic acid fortification. **R. Kalmbach, S. Choumenkovitch, P. Jacques, A. Troen and J. Selhub.** Tufts Univ.
8:45 **226.7** Vitamin C transporter gene SLC23A1 polymorphisms and fasting plasma ascorbate. **L. Cahill, B. Fontaine-Bisson and A. El-Sohemy.** Univ. of Toronto.

227. HUMAN SELENIUM METABOLISM AND EXPERIMENTAL MODELS

Minisymposium

Mon. 8:00 am—Convention Center, Room 152B

Chaired: *R.A. Sunde*

Cochaired: *M. Christensen*

8:00 Overview of selenium status variation in healthy humans. **G.F. Combs, Jr..** USDA, Grand Forks.
8:15 **227.1** Selenium status of a cohort of healthy Americans. **G.F. Combs, Jr., J.C. Watts, A.J. Scheett, L.K. Johnson, C.D. Davis and J.A. Milner.** USDA, Grand Forks and NCI, NIH, Rockville.
8:30 **227.2** Selenium glycinate supplementation effects on gutathione peroxidase and PSA in healthy middle aged men. **R.A. DiSilvestro, W. Zhang and E. Joseph.** Ohio State Univ.
8:45 **227.3** Chemical forms of selenium affect glutathione peroxidase activity in human Caco-2 cell model. **H. Zeng and J.H. Botnen.** USDA, Grand Forks.
9:00 **227.4** Effects of methionine on utilization of food and supplemental forms of selenium. **J.C. Watts and G.F. Combs, Jr..** USDA, Grand Forks .
9:15 **227.5** Reduced utilization of selenium during evolution of mammals. **A. Lobanov, S. Castellano, D.L. Hatfield and V.N. Gladyshev.** Univ. of Nebraska-Lincoln, HHMI, Ashburn, VA and NCI, NIH.
9:30 **227.6** A role for selenoproteins in prostate cancer prevention. **A.M. Diamond, M. Baliga, M. Gutt, V. Diwadkar-Navsariwala, P. Zhuo and Y. Hu.** Univ. of Illinois at Chicago.
9:45 **227.7** Selenium, isoflavones, and AR-regulated genes in rat prostate. **R. Legg, J. Tolman, C. Lovinger, E. Lephart, K. Setchell and M. Christensen.** Brigham Young Univ. and Children' Hosp. Med. Ctr., Cincinnati.

228. COMMUNITY AND PUBLIC HEALTH NUTRITION INTERVENTIONS II

Minisymposium

Mon. 8:00 am—Convention Center, Room 153

Chaired: *C.M. Olson*

Cochaired: *M. Reicks*

8:00 **228.1** Small steps are easier together: community environmental approach to weight gain prevention and breast cancer risk reduction. **C.M. Devine, B. Warren, M. Maley and J. Darling.** Cornell Univ. and Cornell Coop. Ext. Delaware County.
8:15 **228.2** Intervention testing the effectiveness of local engagement in policy as a means to prevent child obesity. **S.J. Jones and E.A. Frongillo.** Univ. of South Carolina.
8:30 **228.3** Increasing whole grain intake by school children. **R. Rosen, L. Sadeghi, M. Reicks and L. Marquart.** Univ. of Minnesota, St. Paul.
8:45 **228.4** The impact of calorie labels on consumer buying behavior in a university dining hall. **L.C. Savage, R.K. Johnson, M. Michahelles, A.B. Howard and J. Kolodinsky.** Univ. of Vermont.
9:00 **228.5** The National School Lunch Program, beverage consumption, and child obesity. **M.A. Clark and P. Gleason.** Mathematica Policy Res., Princeton.
9:15 **228.6** From food aid programs to household food security: insights from two approaches to targeting food-assisted maternal and child health programs in rural Haiti. **P. Menon, M.T. Ruel, M. Arimond, C.U. Loechl, J-P. Habicht, G. Pelto and L. Michaud.** Cornell Univ., IFPRI, Washington, DC, Intl. Potato Ctr., Kampala, Uganda and World Vision-Haiti, Port-au-Prince.
9:30 **228.7** Effectiveness evaluation of a program distributing milk fortified with iron and zinc to reduce anemia and iron deficiency in Mexican toddlers. **T. Shamah, S. Villalpando, V. Mundo, R. Rebollar and J.A. Rivera Dommarco.** Natl. Inst. of Publ. Hlth., Cuernavaca, Mexico.
9:45 **228.8** Milk fortified with iron and zinc improves physical growth of Mexican toddlers, quantitatively and qualitatively. **S. Villalpando, T. Shamah, L. Cuevas, A. Jimenez and J.A. Rivera Dommarco.** Natl. Inst. of Publ. Hlth., Cuernavaca, Mexico.

229. PUBLIC INFORMATION COMMITTEE: HIGH-FRUCTOSE CORN SYRUP

Symposium

Mon. 10:30 am—Convention Center, Ballroom A

Chaired: *V. Fulgoni*

Speakers: **J.S. White,** White Tech. Res
B. Popkin, Univ. of North Carolina at Chapel Hill
P. Havel, Univ. of California-Davis
J. M. Rippe, Shrewsbury, MA

230. HEAVY METAL EXPOSURES IN WOMEN AND CHILDREN, THE ROLE OF NUTRIENTS

Symposium

MON. 10:30 AM—CONVENTION CENTER, ROOM 151B

CHAIRED: *K. KORDAS AND B. LONNERDAL*

10:30 Chair's introduction.
10:40 Arsenic exposure in pregnancy effect modification by metabolism and nutrition. **M. Vahter.** Karolinska Inst.
11:10 Dietary calcium supplementation to lower blood lead levels in pregnancy and lactation. **A.S. Ettinger.** Harvard Sch. of Publ. Hlth.
11:40 Fish consumption and concomitant exposure to MeHg and important brain nutrients. **G. Myers.** Univ. of Rochester Med. Ctr.
12:10 Nutritional metals and environmental neurotoxicology. **R. Wright.** Harvard Sch. of Publ. Hlth.

231. LIPID METABOLISM AND TRANSPORT I

Minisymposium

MON. 10:30 AM—CONVENTION CENTER, ROOM 151A

CHAIRED: *K. BUHMAN*

COCHAIRED: *M. HAUB*

10:30 **231.1** The impact of different ratios of omega-6 polyunsaturated fatty acids to eicosapentaenoic acid plus docosahexaenoic acid on atherosclerotic lesion formation and inflammatory factors in the LDL receptor knockout mouse. **S. Wang, D. Wu, N.R Matthan and A.H. Lichtenstein.** USDA at Tufts Univ.
10:45 **231.2** Effects of omega-3-acid ethyl esters on LDL particle size in subjects with hypertriglyceridemia despite statin therapy. **K.C. Maki, M.H. Davidson, H.E. Bays, E.A. Stein, R.A. Shalwitz and R. Doyle.** Provident Clin. Res., Bloomington, Radiant Develop., Chicago, Metabolic and Atherosclerosis Res. Ctr., Louisville and Cincinnati and Reliant Pharmaceut. Inc., Liberty Corner, NJ.
11:00 **231.3** Omega-3 fatty acids from fish or capsules have equal impact on the omega-3 index. **W.S. Harris, S. Sands and P. Jones.** Uni. of South Dakota and Mid America Heart Inst., Kansas City, KS.
11:15 **231.4** Development of metabolic assessment tools: intra- and inter-individual variation in lipid metabolism after ingestion of an n-3 fatty acid pathway probe. **A.M. Zivkovic, S.M. Watkins and J.B. German.** Univ. of California-Davis, Lipomics Technol. Inc., West Sacramento and Nestle Res. Ctr., Lausanne.
11:30 **231.5** Stearoyl CoA desaturase-1 mediates the pro-lipogenic effects of dietary saturated fat. **H. Sampath, M. Miyazaki, A. Dobrzyn and J. Ntambi.** Univ. of Wisconsin-Madison.
11:45 **231.6** Intestinal lipid metabolism is altered in liver fatty acid-binding protein-null mice. **W. Lagakos, Y.X. Zhou, B. Mandap, B. Binas and J. Storch.** Rutgers Univ. and Texas A&M Univ.
12:00 **231.7** Probing the role of hepatic cholesterol esterification in atherosclerosis promotion via liver-specific depletion of ACAT2. **J.M. Brown, K.M. Lemonidis, M.J. Graham, R.M. Crooke and L.L. Rudel.** Wake Forest Univ. and ISIS Pharmaceut. Inc., Carlsbad, CA.
12:15 **231.8** Multi-functional approach for assessing diet-induced hypercholesterolemia on brain cholesterol metabolism in aged Brown Norway rats — a possible model for Alzheimer's disease. **N. Yamada, D. Kaur, A. Goja, M. Bataineh, R.H. Saab, S.M. Irtenkauf, S.E. Bowen, S.V. Gupta and P. Khosla.** Wayne State Univ.

232. DIETARY BIOACTIVE COMPOUNDS (GENERAL) I

Minisymposium

MON. 10:30 AM—CONVENTION CENTER, ROOM 150A

CHAIRED: *J. WHELAN*

COCHAIRED: *K. FRITSCHE*

10:30 **232.1** Selective kinase response modulators from *Humulus lupulus* and *Acacia nilotica* modulate multiple kinases and improve insulin sensitivity in vitro and in vivo. **M.L. Tripp, L. Pacioretty, V.R. Konda, G. Darland, D. Emma, J. Bland and J. Babish.** MetaProteomics Res. Ctr., Gig Harbor, WA and Ithaca.
10:45 **232.2** VDR ablation alters PXR-mediated activation of drug detoxification enzymes in response to bioactive components of St. John's wort. **R. Patel, M. Renouf and J. Welsh.** Univ. of Notre Dame.
11:00 **232.3** Modulation of PXR and VDR pathways by 1,25D and bioactive compounds of St. John's Wort and soy in HepG2 cells. **N.A. Monaco, M. Renouf and J. Welsh.** Univ. of Notre Dame.
11:15 **232.4** Catechin degradation and concurrent formation of homo- and hetero-catechin dimers during simulated digestion. **A.P. Neilson, A. Hopf, B.R. Cooper, J.A. Bomser and M.G. Ferruzzi.** Purdue Univ. and Ohio State Univ.
11:30 **232.5** Synthesis, bioavailability, and novel biological activities of safflomide and its analogues from safflower and coffee plants. **J. Park.** USDA, Beltsville .
11:45 **232.6** Aloe supplements enhance bioavailability of vitamin C and B12 in older adults. **S. Devaraj, S. Patel, R. Jialal and I. Jialal.** Univ. of California-Davis Med. Ctr.
12:00 **232.7** The effect of different conjugated linoleic acid isomers on fat distribution in women. **M. Raff, T. Tholstrup, S. Toubro, P. Lund and E.M. Straarup.** Royal Vet. and Agr. Univ., Denmark and Tech. Univ. of Denmark.
12:15 **232.8** Identification of Bauer alkamide #8 in urine and feces of human subjects ingesting *Echinacea* root powder. **S-O. Lee, L. Wu, E.S. Wurtele and S. Hendrich.** Iowa State Univ.

No Smoking

In Session Rooms, Poster or Exhibit Area

233. OBESITY AND RELATED COMORBIDITIES IN ANIMALS AND ADULT HUMANS I

Minisymposium

Mon. 10:30 am—Convention Center, Room 150B

Chaired: *N. Hays*

Cochaired: *B.C. Tohill*

10:30 **233.1** Prevalence of the metabolic syndrome in young adults. **J.S. Morrell, J.D. Burke, I.E. Lofgren and R.A. Reilly.** Univ. of New Hampshire.

10:45 **233.2** Intermuscular fat mass and insulin sensitivity in individuals with spinal cord injury. **S.Á. Arngrímsson, M.C. Mojtahedi, R.J. Valentine and E.M. Evans.** Iceland Educ. Univ. and Univ. of Illinois at Urbana-Champaign.

11:00 **233.3** Obesity induced insulin resistance and oxidative stress in mice fed a high fat diet. **J.E. Mells, N. Gletsu-Miller, E. Lin and J.M. Hansen.** Emory Univ.

11:15 **233.4** Influence of obesity on risk and outcomes of kidney disease: a systematic review and meta-analysis. **Y. Wang, X. Chen, Y. Song, B.H. Caballero and L. Cheskin.** Johns Hopkins Sch. of Publ. Hlth. and Harvard Med. Sch.

11:30 **233.5** Effects of increased dietary dairy calcium combined with caloric restriction on lipid profile, LDL particle size and apolipoproteins in overweight/obese postmenopausal women. **D. Fakhrawi, C.J. Lammi-Keefe, L. Beeson, A. Darnell and Z. Cordero-MacIntyre.** Univ. of Connecticut, LSU and Loma Linda Univ.Sch. of Publ. Hlth.

11:45 **233.6** Enhanced insulin sensitivity in subjects on weight loss diets with increased protein. **D.A. Walker, E.M. Evans and D.K. Layman.** Univ. of Illinois at Urbana-Champaign.

12:00 **233.7** Decosahexaenoic acid but not eicosapentaenoic acid reverses *trans*-10, *cis*-12-conjugated linoleic acid-induced insulin resistance in mice. **M. Vemuri, D.S. Kelley, G. Bartolini, R. Rasooly and B. Mackey.** Univ. of California-Davis and USDA, Albany, CA.

12:15 **233.8** Influence of the effect measure on the BMI-mortality association in smokers and never smokers: the ARIC Study. **J.E. McClain, J. Stevens, K.P. Truesdale and J. Cai.** Univ. of North Carolina at Chapel Hill.

234. FUNCTIONAL GENOMICS OF SELENOPROTEINS

Minisymposium

Mon. 10:30 am—Convention Center, Room 152B

Chaired: *X. Lei*

Cochaired: *V. Gladyshev*

10:30 **234.1** Biosynthesis of selenocysteine on its tRNA in eukaryotes. **X-M. Xu, B.A. Carlson, H. Mix, Y. Zhang, K. Saira, R.S. Glass, M.J. Berry, V.N. Gladyshev and D.L. Hatfield.** NCI, NIH, Univ. of Nebraska-Lincoln, Univ. of Arizona and Univ. of Hawaii at Manoa.

10:45 **234.2** Conditional knockout of selenocysteine tRNA gene (*trsp*) in liver modulates lipoprotein metabolism. **A. Sengupta, B.A. Carlson, V.J. Hoffmann, V.N. Gladyshev and D.L. Hatfield.** NCI and OD, NIH and Univ. of Nebraska-Lincoln.

11:00 **234.3** Identification of catalytic redox-active cysteines by detecting sporadic cysteine/selenocysteine pairs in homologous sequences. **D.E. Fomenko, W. Xing, D.J. Thomas and V.N. Gladyshev.** Univ. of Nebraska-Lincoln and U.S. EPA, Research Triangle Park.

11:15 **234.4** Selenoprotein deficiency adversely affects T cell development, proliferation, TCR signaling and cell-mediated immunity. **R.K. Shrimali, R.D. Irons, B.A. Carlson, J.M. Park and D.L. Hatfield.** NCI, NIH and Massachusetts Gen. Hosp., Harvard Med. Sch., Charlestown.

11:30 **234.5** Elevated pancreatic insulin synthesis and secretion in Se-glutathione peroxidase-1 overexpressing mice was associated with altered expression of PDX-1 and UCP2. **X. Wang, M.Z. Vatamaniuk, S. Wang, C. Roneker and X.G. Lei.** Cornell Univ.

11:45 **234.6** Knockout of SOD1 or GPX1 led to decreased bone remodeling in young adult female mice. **P. Roy and X.G. Lei.** Cornell Univ.

12:00 **234.7** Examination of anticancer mechanisms in ras-induced cancer cells by targeting thioredoxin reductase 1 knockdown. **M-H. Yoo, X-M. Xu, B.A. Carlson, V.N. Gladyshev and D.L. Hatfield.** CCR, NIH and Univ. of Nebraska-Lincoln.

12:15 **234.8** Expression of Sep15, a thioredoxin-like selenoprotein, is induced in response to accumulation of unfolded proteins in the endoplasmic reticulum. **V.M. Labunskyy, D.E. Fomenko, R.K. Shrimali, D.L. Hatfield and V.N. Gladyshev.** Univ. of Nebraska-Lincoln and NCI, NIH.

235. DIETARY INTAKE: CAUSES AND CONSEQUENCES

Minisymposium

Mon. 10:30 am—Convention Center, Room 152A

Chaired: *H. Kalkwarf*

Cochaired: *L. Caulfield*

10:30 **235.1** Genetic polymorphism of the adenosine A_{2A} receptor affects habitual caffeine consumption. **M.C. Cornelis, A. El-Sohemy and H. Campos.** Univ. of Toronto and Harvard Sch. of Publ. Hlth.

10:45 **235.2** High risk adolescent obesity behavior patterns: a comparison of clusters, factors, and an index measure. **J.E. Boone, P. Gordon-Larsen and L.S. Adair.** Univ. of North Carolina at Chapel Hill.

11:00 **235.3** The association between dietary intake of polyunsaturated fatty acids and the risk of diabetic peripheral neuropathy in the National Health and Nutrition Examination Survey 1999-2002. **M. Tao, M. Eberhardt, M. McDowell and S. Saydah.** Ctrs. for Dis. Control and Prevent., Hyattsville, MD.

11:15 **235.4** Dietary glycemic index and load and risk of type 2 diabetes in older adults. **A.L. Anderson, N.R. Sahyoun, T.B. Harrris, F.A. Tylavsky, B.H. Goodpaster, J.S. Lee and D.E. Sellmeyer.** Univ. of Maryland College Park, NIA, NIH, Univ. of Tennessee, Memphis, Univ. of Pittsburgh and UCSF.

11:30 **235.5** Dietary patterns and depressive mood in a multiethnic representative sample of Texas eighth graders. **G.C. George, D.M. Hoelscher, J. Sanders and T.A. Nicklas.** Sch. of Publ. Hlth., Univ. of Texas Hlth. Sci. Ctr. at Houston and Baylor Col. of Med.

11:45 **235.6** Extreme psychological stress and changes in food intake. **L. Jahns, E. Epel, T. Adam and J. Sieber.** Univ. of Tennessee and UCSF.

12:00 **235.7** Associations between psychological well-being and weight status in transitional young adults. **S.N. Johnson, L. Jahns and K.A. Lawler-Row.** Univ. of Tennessee and East Carolina Univ. Col. of Arts and Sci.

12:15 **235.8** Are healthy diets that follow the 2005 Dietary Guidelines for Americans associated with incident hip fracture risk in men and women? **L.M. Troy, M.T. Hannan, S.L. Booth, D.P. Kiel, E.T. Kennedy, J. Fogli-Cawley and P.F. Jacques.** Friedman Sch., Tufts Univ., USDA at Tufts Univ., Hebrew SeniorLife, Boston, Harvard Med. Sch. and Beth Israel Deaconess Med. Ctr.

236. BENEFICIAL HEALTH EFFECTS OF COFFEE DRINKING: RECENT ADVANCES IN EPIDEMIOLOGIC AND EXPERIMENTAL KNOWLEDGE

Controversy

MON. 12:45 PM—CONVENTION CENTER, ROOM 151A

CHAIRED: *J.R. COUGHLIN AND D. STEFFEN*

12:45 Coffee and health overview. **J.R. Coughlin.** President, Coughlin Assoc.

12:55 Epidemioloogy of coffee and cancer. **L. Arab.** UCLA.

1:20 Coffee and type 2 diabetes. **R.M. Van Dam.** Harvard Sch. of Publ. Hlth.

237. OBESITY-ASSOCIATED INFLAMMATION, IMMUNE DYSFUNCTION, AND EFFECTS OF NUTRIENT AND LIFE STYLE MODIFICATION

Symposium

(Supported by an educational grant from Novartis, Takeda Pharmaceuticals North America, Inc.)

MON. 3:00 PM—CONVENTION CENTER, BALLROOM A

CHAIRED: *S.N. MEYDANI*

COCHAIRED: *K. J. CLAYCOMBE*

3:00 Chair's introduction.

3:05 Relationship between obesity and inflammatory responses. **F.X. Pi-Sunyer.** Columbia Univ.

3:35 Effects of life style modification on obesity-associated inflammation and cardiovascular diseases. **E. Rimm.** Harvard Univ.

4:05 Adiponectin, AMP-activated protein kinase, and the regulation of carbohydrate and fatty acid metabolsim. **H.F. Lodish.** MIT.

4:35 Adipose tissue inflammation in obesity-associated metabolic complications. **A. Greenberg.** Tufts Univ.

Visit the Exhibits

238. HISTORY OF NUTRITION: LEGACY OF WILBUR O. ATWATER: HUMAN NUTRITION RESEARCH EXPANSION IN USDA

Symposium

MON. 3:00 PM—CONVENTION CENTER, ROOM 151A

CHAIRED: *J. DUPONT*

3:00 Early history 1893-1960. **J. Dupont and H.K. Stiebeling.** Florida State Univ. and Florida State Univ. (Ret.).

3:10 Senate Select Committee on Nutrition and Human Needs: Food and Agriculture Act of 1977. **D. Porter.** Congressional Res. Svc., Library of Congress.

3:40 Expansion of Human Nutrition Research Centers to Grand Forks, ND. **H.H. Sandstead.** Univ. of Texas Med. Branch.

4:10 USDA Human Nutrition Center, 1978-82. **G.F. Combs, Sr..** Univ. of Southern Mississippi.

4:30 Founding of the Children's Nutrition Research Center, Baylor College of Medicine, Houston TX. **B.L. Nichols.** USDA, Baylor Col. of Med.

5:00 Founding of the Jean Mayer USDA Human Nutrition Research Center on Aging, Tufts Univ., Boston MA. **I.H. Rosenberg.** USDA atTufts Univ.

5:30 Interagency development of food composition research. **G.R. Beecher.** USDA, Beltsville (ret.).

239. HUMAN MILK AND LACTATION I

Minisymposium

MON. 3:00 PM—CONVENTION CENTER, ROOM 151B

CHAIRED: *A.K. ANDERSON*

COCHAIRED: *G. MARQUIS*

3:00 **239.1** Does the human immunodeficiency virus impair the onset of lactation among Ghanaian mothers? **G.E. Otoo, A.A. Lartey, G.S. Marquis, D. Sellen, D. Chapman and R. Pérez-Escamilla.** Univ. of Connecticut, Univ. of Ghana, McGill Univ. Sch. of Dietetics and Human Nutr. and Univ. of Toronto.

3:15 **239.2** Maternal HIV status is associated with early breastfeeding practices of Ghanaian infants: preliminary results from the RIING study. **G.S. Marquis, A.A. Lartey, L. Brakohiapa, W. Ampofo, R. Pérez-Escamilla, D. Sellen and R.E. Mazur.** Sch. of Dietetics and Human Nutr., McGill Univ., Iowa State Univ., Univ of Ghana, Univ of Connecticut and Univ of Toronto.

3:30 **239.3** Effect of vitamin supplementation on breast milk concentrations of retinol, carotenoids, and tocopherols first year-pospartum in HIV-infected Tanzanian women. **A.L. Webb, S. Aboud, J. Furtado, C. Murrin, H. Campos, W.W. Fawzi and E. Villamor.** Harvard Sch. of Publ. Hlth. and Muhimbili Univ. Col. of Hlth. Sci., Tanzania.

3:45 **239.4** Risk factors associated with early breastfeeding cessation among first-time, low-income mothers. **L.A. Nommsen-Rivers, A. Cullum, A.M. Mastergeorge, R.L. Hansen and K.G. Dewey.** Univ. of California-Davis, Sutter Med. Ctr., Sacramento and Univ. of California-Davis Med. Ctr.

4:00 **239.5** Maternal autonomy is an independent predictor of feeding practices and growth in rural Indian infants. **M. Shroff, M.E. Bentley, B. Nagalla, C. Suchindran, P. Griffiths and S. Vazir.** Univ of North Carolina at Chapel Hill, Natl. Inst. of Nutr., Hyderabad, India and Loughborough Univ., UK.

4:15 **239.6** Does exclusive breastfeeding affect maternal and infant body composition? **A.K. Anderson.** Univ. of Georgia.

4:30 **239.7** Mammary gland permeability (Na:K in milk) and growth velocity in breastfed children. **M.E. Flores-Quijano, L. Ramírez, M. Tolentino and E. Casanueva.** Natl. Inst. of Perinatol., Mexico City.

4:45 **239.8** Effects of energy density and feeding frequency of complementary foods on total daily energy intake and breast milk consumption by healthy, breastfed children in Bangladesh. **M.M. Islam, M. Khatun, J.M. Peerson, T. Ahmed, M.A.H. Mollah, K.G. Dewey and K.H. Brown.** Univ. of CaliforniaDavis and ICDDR,B, Dhaka and Dhaka Med. Col. Hosp., Bangladesh.

240. DIETARY BIOACTIVE COMPOUNDS: MODIFICATION OF PHYSIOLOGICAL, ABSORPTIVE AND TRANSPORT PROCESSES

Minisymposium

MON. 3:00 PM—CONVENTION CENTER, ROOM 150A

CHAIRED: *S. HENDRICH*

COCHAIRED: *S. HENNING*

3:00 **240.1** In utero and postpartum exposure to long chain n-3 polyunsaturated fatty acids improves intestinal glucose absorption and glycogen stores in weanling pig. **N.K. Gabler, J.D. Spencer, D.M. Webel and M.E. Spurlock.** Iowa State Univ. and JBS United Inc., Sheridan, IN.

3:15 **240.2** Phenolic acids in the gastrointestinal tract of pigs fed black raspberry. **X. Wu, T. Hager, H.E. Pittman III, H. Aaron, L. Howard and R. Prior.** USDA, Arkansas Children's Nutr. Ctr. and Univ. of Arkansas.

3:30 **240.3** In vitro and in vivo modelling of the gastrointestinal environment for the release of nutrients and phytochemicals from almond seeds. **M.S. Wickham, G. Mandalari, G. Rich, R. Faulks, D. Picout and P. Ellis.** Inst. of Food Res., Norwich, UK and Sch. of Biomed. And Hlth. Sci., Kings Col. London.

3:45 **240.4** Mathematical modelling of lipid bioaccessibility in almond seeds. **P.R. Ellis, D.R. Picout, M.S.J. Wickham, G. Mandalari, G.T. Rich, R.M. Faulks and K. Lapsley.** Sch. of Biomed. and Hlth. Sci., King's Col. London, Inst. of Food Res., Norwich and Almond Board of California, Modesto.

4:00 **240.5** Extrusion increases bioavailability of sorghum procyanidins. **L. Gu, H. Suzanne, L. Rooney and R. Prior.** Arkansas Childrens Nutr. Ctr., Texas A&M Univ. and USDA, ARS.

4:15 **240.6** Absorption and metabolism of pelargonidin-3-glucoside with increasing strawberry dose. **C. Carkeet, B.A. Clevidence and J.A. Novotny.** USDA, Beltsville .

4:30 **240.7** The effect of dose size on bioavailability of acylated and nonacylated anthocyanins from red cabbage. **C.S. Charron, B.A. Clevidence, S.J. Britz and J.A. Novotny.** USDA, Beltsville .

241. B VITAMINS AND METHYL GROUP METABOLISM II

Minisymposium

MON. 3:00 PM—CONVENTION CENTER, ROOM 150B

CHAIRED: *K.L. SCHALINSKE*

COCHAIRED: *J.W. MILLER*

3:00 **241.1** Cytoplasmic serine hydroxymethyltransferase is a modifier of Apc^{min}. **A.J. MacFarlane, C.A. Perry, D.M. Lin and P.J. Stover.** Cornell Univ.

3:15 **241.2** Reduced expression and methylation of Soat2 in liver from mice with hyperhomocysteinemia. **A.M. Devlin, R. Singh, R. Wade, H. Boersma and S.M. Innis.** Univ. of British Columbia.

3:30 **241.3** Do perturbations of hepatic and renal homocysteine metabolism in the diabetic rat impact DNA methylation status? **K.T. Williams and K.L. Schalinske.** Iowa State Univ.

3:45 **241.4** Effects of eight folate-relevant polymorphisms on human blood folate and homocysteine. **A.J. Clifford, J.E. Owens, B. Liu, H-G. Müller, J.F. Medrano, J.G. Fadel and B. Moghaddam.** Univ. of California-Davis and Hlth. Syst., Sacramento.

4:00 **241.5** Maternal plasma and erythrocyte folate levels and risk of oral clefts in Utah. **R.G. Munger, T. Tamura, K. Johnson, M. Feldkamp, R. Phister, L. Botto and J. Carey.** Utah State Univ., Univ. of Alabama at Birmingham and Utah Dept. of Hlth., Salt Lake City.

4:15 **241.6** Vitamin B12 deficiency is prevalent and associated with serum gastrin in rural Mexican women. **M.A. Anaya Loyola, J.L. Rosado Loria and L.H. Allen.** Autonomous Univ. of Queretaro, Mexico, Univ. of California-Davis and USDA, Davis.

4:30 **241.7** Folate intake and ethnicity influence choline status in young women. **C. Abratte, J. Hung, W. Wang, R. Li, D. Moriarty and M. Caudill.** California State Polytech Univ.-Pomona.

4:45 **241.8** Unmetabolized folic acid in human milk: impact of folate supplementation during lactation. **L.A. Houghton, J. Yang and D.L. O'Connor.** Sch. of Nutr. And Dietetics, Acadia Univ., Canada, Univ. of Toronto and Hosp. for Sick Children, Toronto.

242. DIETARY ASSESSMENT IN SPECIFIC POPULATIONS

Minisymposium

MON. 3:00 PM—CONVENTION CENTER, ROOM 152B

CHAIRED: *S. MOELLER*

COCHAIRED: *T. LAROWE*

3:00 **242.1** Evaluation of an Institute of Medicine approach to dietary planning in long-term care. **M. Ventura-Marra and V.H. Castellanos.** Florida Intl. Univ.

3:15 **242.2** Review of the DRIs for selected nutrients: application challenges and implications for food assistance programs. **M.K. Crepinsek, B. Devaney and L. Quay.** Mathematica Policy Res., Cambridge, MA and Princeton.

3:30 **242.3** Validation of a new antioxidant nutrient food frequency questionnaire in Whites and African Americans. **J.A. Satia, J.L. Watters and J.A. Galanko.** Univ. of North Carolina at Chapel Hill.
3:45 **242.4** Dietary patterns are similar using a population specific diet screening tool and multiple 24-hour recalls. **R.L. Bailey, D.C. Mitchell, K.L. Tucker and H. Smiciklas-Wright.** Penn State and Tufts Univ.
4:00 **242.5** Development of a diet quality score in Guatemala. **C.O. Gregory, M.L. McCullough, M. Ramirez-Zea and A.D. Stein.** Emory Univ., American Cancer Soc., Atlanta and INCAP, Guatemala City.
4:15 **242.6** Consumption of food and beverage items among third and fourth grade schoolchildren in Quetzaltenango, Guatemala: description and inferences from a one-day survey using an interactive, pictorial registry method. **G. Montenegro-Bethancourt, N.W. Solomons, C.M. Doak and M. Vossenaar.** CeSSIAM, Guatemala City and Free Univ., Amsterdam.
4:30 **242.7** Distribution of energy, macro- and micronutrients intakes among meals and snacks in the one-day diets of schoolchildren from Quetzaltenango, Guatemala. **M. Vossenaar, G. Montenegro-Bethancourt, L.D.J. Kuijper, C.M. Doak and N.W. Solomons.** CeSSIAM, Guatemala and Free Univ. Amsterdam.

243. EXPERIMENTAL ANIMAL NUTRITION — NUTRIENT INFERENCES BASED ON ASSESSMENTS OF SKELETAL TISSUES

Minisymposium

Mon. 3:00 pm—Convention Center, Room 152A

Chaired: *T.D. Crenshaw*

Cochaired: *H. Weiler*

3:00 **243.1** Dietary supplementation of phytase enhanced bone density in young pigs fed a high phosphorus diet. **P. Roy and X.G. Lei.** Cornell Univ.
3:15 **243.2** Genetic background influences phosphorus utilization for growth and bone integrity in pigs. **L.S. Alexander, S.A. Cutler, M.F. Rothschild and C.H. Stahl.** Iowa State Univ.
3:30 **243.3** The multi-coloured guinea pig is a novel animal model to study the effects of intrauterine growth restriction on bone and body composition. **L.L. Burr and H. Weiler.** McGill Univ. Sch. of Dietetics and Human Nutr.
3:45 **243.4** Teeth development and alcoholism — experimental study. **A.G. Fonseca, P.C. Gomes, H.R. Moreno and A.M.S. Cabrita.** Catholic Portuguese Univ. and Fac. of Med. of Coimbra, Portugal.
4:00 Lecture/summary. Prospects and pitfalls of methodologies used to assess skeletal tissues. **T. D. Crenshaw.** Univ. of Wisconsin-Madison.

244. BORON

Minisymposium

Mon. 3:00 pm—Convention Center, Room 153

Chaired: *C.D. Hunt*

Cochaired: *K.G. Koski*

3:00 Chair's introduction.
3:15 **244.1** Boric and phenyl boric acids induce apoptosis in both prostate cancer and breast cancer cell lines. **S.L. Meacham, C. Hall, S. Shen and S.W. Carper.** Univ. of Nevada, Las Vegas.
3:30 **244.2** The effect of boron on the UPR in prostate cancer cells is biphasic. **K. Henderson and C. Eckhert.** UCLA.
3:45 **244.3** Dietary boron deprivation reduces *Heligmosomoides bakeri* (Nematoda) survival and alters cytokine profile but infection modifies liver minerals in mice. **K.G. Koski, A-C. Bourgeois, K. Sabally and M.E. Scott.** McGill Univ. Sch. of Dietetics and Human Nutr.
4:00 **244.4** Female offspring of rat dams fed low boron diets during pregnancy and lactation exhibit signs of the metabolic syndrome during early adulthood: increased body weight, and serum triglycerides and total cholesterol concentrations. **C.D. Hunt and J.P. Idso.** USDA, Grand Forks.
4:15 **244.5** Boron deprivation increases plasma homocysteine, a factor negatively associated with bone composition and strength. **F.H. Nielsen.** USDA, Grand Forks.

Pathology

245. VASCULAR DEVELOPMENT, GROWTH AND ADAPTATIONS MINI-MEETING: VASCULAR ADAPTATIONS

Symposium

(*Sponsored by:* AAA and NAVBO)

MON. 8:00 AM—CONVENTION CENTER, ROOM 103A

CHAIRED: *R. TOMANEK*

Vascular Biology

See Session 184 on page 50 for session details.

246. DEVELOPMENTAL PATHWAYS IN CANCER PROGRESSION

Symposium

MON. 8:30 AM—CONVENTION CENTER, ROOM 144C

CHAIRED: *C. MORENO*

COCHAIRED: *G. VECCHIO*

Neoplasia

8:30 Introduction. **C. Moreno.** Emory Univ.
8:45 Wnt signaling and cancer. **S.A. Aaronson.** Mount Sinai Sch. of Med.
9:30 Perlecan and Shh signaling in prostate cancer. **S. Datta.** Texas A&M Univ.
10:10 Physiologic and pathophysiologic Notch signaling: mechanisms and implications. **J.C. Aster.** Brigham and Women's Hosp.
10:50 Tumor suppression by TGF-beta. **H.L. Moses.** Vanderbilt Univ. Med. Ctr.

247. ASIP/HCS TRENDS IN EXPERIMENTAL PATHOLOGY SYMPOSIUM: IMAGING AND HISTOCHEMISTRY

Symposium

(Supported by an educational grant from The Robert E. Stowell Endowment Fund)

(*Sponsored by:* ASIP and HCS)

MON. 8:30 AM—CONVENTION CENTER, ROOM 140A

CHAIRED: *H.A.B. MULTHAUPT AND E.R. UNGER*

Histochemistry

8:30 Quantitative imaging of nuclear organization for research and diagnosis purposes. **S.A. Lelievre.** Purdue Univ. Sch. of Vet. Med.
9:15 Live imaging of cell signalling dynamics at immune cell membranes using advanced fluorescence microscopy, FRET and FLIM. **T.I. Magee.** Imperial Col. London.
10:00 Visualization of cell-extracellular matrix interactions and signaling. **J.R. Couchman.** Imperial Col. London.
10:45 Whole-body subcellular multicolor imaging of tumor-host interaction and drug response in real time. **R.M. Hoffman.** AntiCancer Inc., San Diego.

248. LEUKOCYTE-ENDOTHELIAL CELL INTERACTIONS

Minisymposium

MON. 8:30 AM—CONVENTION CENTER, ROOM 159

CHAIRED: *M. CYBULSKY*

COCHAIRED: *J.S. REICHNER*

Inflammation

8:30 **248.1** Bacterial DNA promotes neutrophil adhesion to endothelial cells. **L. Jozsef, D. El Kebir, T. Khreiss and J.G. Filep.** Maisonneuve-Rosemont Hosp., Univ. of Montreal.
8:45 **248.2** Carbon monoxide (CO) liberated by CO-releasing molecule (CORM-3) interferes with upregulation of vascular pro-adhesive phenotype in experimental model of sepsis. **B-W. Sun, K. Katada, A. Bihari, R. Motterlini, R.F. Potter and G. Cepinskas.** Lawson Hlth. Res. Inst., London, Canada and Northwick Park Inst., Harrow, UK.
9:00 **248.3** Calcineurin, a serine/threonine phosphatase, is required for GPCR-triggered association of paxillin, a cytoplasmic adapter protein, with high affinity $\alpha 4\beta 1$ integrins in U937 cells. **T. Wong, S.J. Hyduk and M.I. Cybulsky.** Univ. of Toronto and Toronto Gen. Hosp.
9:15 **248.4** Regulation of LFA-1-integrin-mediated leukocyte recruitment by Cbl-b and 14-3-3 proteins. **E.Y. Choi, C. Gahmberg and T. Chavakis.** NCI, NIH and Univ. of Helsinki.
9:30 **248.5** Mmac-1-integrin. **T. Chavakis, E. Choi, C. Xie, E. Chavakis, C. Gahmberg, M. Bianchi, P. Nawroth and V. Orlova.** NCI, NIH, Univ. of Heidelberg, Univ. of Frankfurt, Univ. of Helsinki and San Raffaele Inst., Milan.
9:45 **248.6** ICAM-1 diffusion enhances leukocyte adhesion under flow conditions. **D.F. Kucik, X. Wu and K. Gupta.** Univ. of Alabama at Birmingham and Birmingham VA Med. Ctr.
10:00 **248.7** Neutrophil and monocyte transmigration elicited by ischemia/reperfusion injury and CCL2 is associated with remodelling of the venular basement membrane in vivo. **M-B. Voisin, A. Woodfin and S. Nourshargh.** Fac. of Med., Imperial Col. London.
10:15 **248.8** PECAM-1 and JAM-A mediate leukocyte transmigration in a stimulus-specific manner: is this phenomenon governed by the strain of mice investigated? **A. Woodfin, K. Larbi, F. Krombach, E. Dejana and S. Nourshargh.** Fac. of Med., Imperial Col. London, Ludwig Maximilians Univ. Munich and Italian Fndn. for Cancer Res., Milan.
10:30 **248.9** PECAM tyrosine 663 is critical for transendothelial migration. **B. Dasgupta, Z. Mamdouh and W.A. Muller.** Weill Med. Col. of Cornell Univ.

10:45 **248.10** Leukocyte adenosine A2A receptor activation inhibits leukocyte-endothelial interactions in vivo. **R. Tang, H. Wang, J-F. Chen and J. Linden.** Univ. of Minnesota, Minneapolis, Boston Univ. and Univ. of Virginia Hlth. Syst.

11:00 **248.11** Environmental aldehyde, acrolein regulates endothelial cell adhesion molecules. **S.D. Sithu, S. Srivastava, E.N. Vladykovskaya, A. Bhatnagar and S.E. D'Souza.** Univ of Louisville.

11:15 **248.12** Iron-dependent redox signaling and increase in leukocyte-endotelial interaction in a model of microvascular inflammation in lung. **N.V. Gorbunov, D.K. Das, N. Gurusamy and J.L. Atkins.** Walter Reed Army Inst. of Res. and Univ. of Connecticut Sch. of Med.

249. MOLECULAR AND CELLULAR BIOLOGY OF CARDIAC DISEASE

Minisymposium

Mon. 8:30 am—Convention Center, Room 149B

Chaired: *R.R. Rodriguez*

Cochaired: *M. Halushka*

8:30 **249.1** Alpha-1 AMP kinase knockout mice develop cardiac hypertrophy. **J.R. Turk, X. Feng, J. Casati, D. Fine and L.J. Rubin.** Univ. of Missouri-Columbia.

8:45 **249.2** The protective role of IL-13 in experimental autoimmune myocarditis. **D. Cihakova, J.G. Barin, M. Afanasyeva, M. Kimura, D. Fairweather, M. Berg, M.V. Talor, G.C. Baldeviano, S. Frisancho, K. Gabrielson, D. Bedja, A.N.J. McKenzie and N.R. Rose.** Johns Hopkins Univ., Univ. of Calgary, Johns Hopkins Univ. Bloomberg Sch. of Publ. Hlth. and MRCl Lab. of Molec. Biol., Cambridge.

9:00 **249.3** Sensory innervation in human myxomatous mitral valves. **E.R. Rodriguez, C.D. Tan and B.P. Griffin.** Cleveland Clin.

9:15 **249.4** Progression to heart failure modulated in a conditional H-Ras-V12 mouse model of human cardiomyopathy. **E. Spehalski, P.L. Martin, J.M. Rozenberg, M.J. Hoenerhoff, S.B. Hoover, B.E. Walling, C.R. Vinson and R.M. Simpson.** NCI, NIH.

9:30 **249.5** Genetic changes in human mutant polymerase gamma alters mtDNA biogenetics and impacts cardiac muscle function. **J.J. Kohler, S. Hosseini, C. Haase, T. Ludaway, R. Russ, S. Chan, W. Copeland and W. Lewis.** Emory Univ. and NIEHS, NIH, Research Triangle Park.

9:45 **249.6** MicroRNAs are aberrantly expressed in hypertrophic heart: do they play a role in cardiac hypertrophy? **C. Zhang, Y. Cheng, J. Yang, D.B. Dean, X. Liu and H. Chen.** Univ. of Tennessee Hlth. Sci. Ctr.

10:00 **249.7** Expression profiling of normal and myxomatous human mitral valves. **E.R. Rodriguez, B.P. Griffin and C.D. Tan.** Cleveland Clin.

10:15 **249.8** Cardiac repair/remodeling following infarction in mice with targeted deletion of NADPH oxidase. **W. Zhao, R. Yan, D. Zhao, Y. Chen and Y. Sun.** Univ. of Tennessee Hlth. Sci. Ctr.

10:30 **249.9** Thyroid hormone predisposed rabbits to atrial arrhythmia: a possible new model of atrial arrhythmias. **Z. Yu, C. Huang, S. Wang, T. Wang and B. Yang.** Renmin Hosp., Univ. of Wuhan, People's Republic of China.

10:45 **249.10** Increased Toll-like receptor expression in vitro and in vivo under hyperglycemia/diabetes. **M.R. Dasu, S. Devaraj and I. Jialal.** Univ. of California-Davis Med. Ctr.

11:00 **249.11** Expression of clusterin and VEGF in diabetic retinopathy. **J. Head, D. Shen, M. Zhou, R. Garfinkel and C-C. Chan.** NEI, NIH and Retina Gp. Of Washington, Chevy Chase, MD.

11:15 **249.12** High glucose blunts angiopoietin-1-induced angiogenesis in myocardial endothelial cells via impairment of Akt and eNOS phosphorylation. **Q. Tuo, H. Yu and J-X. Chen.** Vanderbilt Univ. Med. Ctr.

250. REGULATION OF MUCOSAL INFLAMMATORY RESPONSES

Minisymposium

Mon. 8:30 am—Convention Center, Room 149A

Chaired: *I. Williams*

Cochaired: *A. Neish*

Epithelial Cell Biology

8:30 **250.1** Control of interferon-alphaA by CD73: implications for mucosal inflammation. **N.A. Louis, A.M. Robinson, J. Karhausen, M. Scully and S.P. Colgan.** Brigham and Women's Hosp., Univ. Clin. Tuebingen and Univ. of Colorado Hlth. Sci. Ctr.

8:45 **250.2** A hydrogen-sulfide releasing derivative of mesalamine exhibits markedly enhanced anti-inflammatory effects in experimental colitis. **J.L. Wallace, L. Santucci, S. Orlandi, A. Mencarelli, E. Distrutti and S. Fiorucci.** Univ. of Calgary, Canada and Univ. of Perugia, Italy.

9:00 **250.3** Identification of molecular anti-inflammatory mechanisms of adenosine: cullin-1 deneddylation during hypoxic preconditioning. **J. Khoury, J.C. Ibla, A.S. Neish and S.P. Colgan.** Children's Hosp. Boston, Brigham and Women's Hosp., Emory Univ. Sch. of Med. and Univ. of Colorado Hlth. Sci. Ctr.

9:15 **250.4** Resolvin E1 promotes mucosal surface clearance of neutrophils: a new paradigm for inflammatory resolution. **E.L. Campbell, N.A. Louis, G. Canny, M. Arita, C.N. Serhan and S.P. Colgan.** Univ. of Colorado Hlth. Sci. Ctr. and Brigham and Women's Hosp., Harvard Med. Sch.

9:30 **250.5** Structural requirements of SIRPα binding to CD47. **W.Y. Lee, D. Weber, O. Laur, I. McCall, R. Jen, K.M. Gernert and C.A Parkos.** Emory Univ.

9:45 **250.6** A novel population of IL-10 producing lamina propria macrophages which promote intestinal tolerance. **T.L. Denning, Y-C. Wang, H. Tang, S. Patel, I. Williams and B. Pulendran.** Emory Univ.

10:00 **250.7** Selective expression of TRANCE by subepithelial dome stromal cells in Peyer's patches regulates local induction of intestinal immune responses. **R.T. Taylor, S.R. Patel, B.R. Butler and I.R. Williams.** Emory Univ.

10:15 **250.8** Enteric commensal bacteria elicit epithelial ROS and modulate signaling via repression of cullin-dependent ubiquitination. **L.S. Collier-Hyams, H. Wu, A. Kumar and A.S. Neish.** Emory Univ. Sch. of Med.

10:30 **250.9** *Salmonella* AvrA modulates innate immune signaling: a mechanistic analysis in *Drosophila*. **R. Jones, C. Wentworth and A. Neish.** Emory Univ. Sch. of Med.

10:45 **250.10** Defensin α-1 is upregulated in human cells in response to early *Trypanosoma cruzi* infection as an apoptotic trypanocidal mechanism. **M.N. Madison, Y.Y. Kleshchenko, P.N. Nde, K.J. Simmons, M.F. Lima and F. Villalta.** Meharry Med. Col.

11:00 **250.11** Identification of Rrp2-controlled mammalian infection-associated proteins in *Borrelia burgdorferi*. **K. Hosey, J.A. Cameron and F. Yang.** Jackson State Univ. and Indiana Univ. Sch. of Med.

251. AANP SAUL KOREY LECTURE

MON. 8:30 AM—CONVENTION CENTER, ROOM 144A/B

Neuropathology

8:30 Introduction. **B.J. Crain.** Johns Hopkins Univ. Sch. of Med.

8:35 Neuropathology and genetics of parkinsonism. **D.W. Dickson.** Mayo Clin. Jacksonville.

252. AANP MEETING-RELATED AWARDS PRESENTATIONS

Special Session

MON. 9:30 AM—CONVENTION CENTER, ROOM 144A/B

Neuropathology

Trainee Travel Awards Presentations

- Weil Award for Best Paper on Experimental Neuropathology Presented at the Annual Meeting
- Moore Award for Best Paper on Clinico-Pathological Correlation Presented at the Annual Meeting
- Rubinstein Award for Best Paper on Neuro-oncology Presented at the Annual Meeting
- O.T. Bailey-Helena Riggs Award for Best Presentation by a Trainee at the Diagnostic Slide Session

253. AANP PRESENTATION OF AWARDS FOR MERITORIOUS CONTRIBUTIONS TO NEUROPATHOLOGY

Special Session

MON. 9:50 AM—CONVENTION CENTER, ROOM 144A/B

Neuropathology

254. AANP CLOSING CEREMONY

Special Session

MON. 10:00 AM—CONVENTION CENTER, ROOM 144A/B

Neuropathology

NO SMOKING IN SESSION ROOMS, POSTER OR EXHIBIT AREA

255. VASCULAR DEVELOPMENT, GROWTH AND ADAPTATIONS MINI-MEETING: VASCULAR DEVELOPMENT

Symposium

(*Sponsored by:* AAA and NAVBO)

MON. 10:30 AM—CONVENTION CENTER, ROOM 103A

CHAIRED: *T. MIKAWA*

Vascular Biology

See Session 188 on page 50 for session details.

256. AMGEN OUTSTANDING INVESTIGATOR AWARD LECTURE

(Supported by an educational grant from Amgen)

MON. 11:30 AM—CONVENTION CENTER, ROOM 140A

11:30 Introduction. **J.S. Morrow.** Yale Univ. Sch. of Med.

11:35 Expression and maintenance of mitochondrial DNA: new insights into human disease pathology. **G.S. Shadel.** Yale Univ. Sch. of Med.

257. ASIP PRESIDENTIAL SYMPOSIUM: VIRUSES AND HUMAN CANCER

Symposium

(Supported by an educational grant from Merck)

MON. 2:00 PM—CONVENTION CENTER, ROOM 144A/B

CHAIRED: *P.M. HOWLEY*

Neoplasia

2:00 Hepatitis C virus infection: coevolution of virus and host. **F.V. Chisari.** The Scripps Res. Inst.

2:45 Role of lytic Epstein-Barr virus proteins in malignancy. **S.C. Kenney.** Univ. of Wisconsin Sch. of Med. and Publ. Hlth.

3:30 Kaposi's sarcoma, herpesvirus and p53. **Y. Chang.** Univ. of Pittsburgh Sch. of Med.

4:15 Papillomavirus oncogenic mechanisms. **P.M. Howley.** Harvard Med. Sch.

258. HCS WORKSHOP: TISSUE FIXATION FOR MOLECULAR ANALYSIS IN PATHOLOGY AND CELL BIOLOGY

Workshop

(*Sponsored by:* HCS, ISBER and ASIP)

MON. 2:00 PM—CONVENTION CENTER, ROOM 140A

CHAIRED: *D.G. BASKIN AND S-R. SHI*

2:00 The use of tissue surrogates to study formaldehyde fixation of proteins. **J. Mason.** Armed Forces Inst. of Pathol.

2:30 Ethanol-based fixation as an alternative to formaldehyde. **C.B. Umbricht.** Johns Hopkins Univ. Sch. of Med.
3:00 The molecular mechanism of antigen retrieval. **S. Bogen.** Boston Univ. Sch. of Med.
3:30 Fixation of tissue for extraction of DNA for PCR. **D. Shibata.** USC Med. Ctr.
4:00 Chemistry of formaldehyde fixation for preservation of nucleic acids. **T.J. O'Leary.** Dept. of Veterans Affairs.
4:30 Molecular pathology of formalin-fixed paraffin embedded material. **R.Y. Osamura.** Tokai Univ. Sch. of Med.

259. VASCULAR DEVELOPMENT, GROWTH AND ADAPTATIONS MINI-MEETING: VASCULAR STEM AND PROGENITOR CELLS

Symposium

(*Sponsored by:* AAA and NAVBO)

MON. 2:30 PM—CONVENTION CENTER, ROOM 103A

CHAIRED: *K. HIRSCHI*

COCHAIRED: *J. BISCHOFF*

Vascular Biology

See Session 193 on page 51 for session details.

260. NAVBO EARL P. BENDITT AWARD LECTURE AND PRESENTATION

MON. 5:00 PM—CONVENTION CENTER, ROOM 144A/B

Vascular Biology

Speaker: **H.F. Dvorak.** Beth Israel Deaconess Med. Ctr.

Title: How Tumors Make Bad Blood Vessels

5:00 How tumors make bad blood vessels. **H.F. Dvorak.** Beth Israel Deaconess Med. Ctr.

261. HCS MEMBERSHIP BUSINESS MEETING

MON. 5:30 PM—RENAISSANCE HOTEL, ROOM 12/13/14

CHAIRED: *H.A.B. MULTHAUPT*

262. BLOOD VESSEL CLUB: SHOWCASE OF RECENT BREAKTHROUGHS IN VASCULAR BIOLOGY

Special Session

(Supported by an educational grant from VEC Technologies, Inc.)

(*Sponsored by:* ASIP and NAVBO)

MON. 6:00 PM—CONVENTION CENTER, ROOM 144A/B

CHAIRED: *K.A. LEY, W.A. MULLER AND G.K. OWENS*

Vascular Biology

Reception to follow in the Foyer.

6:00 Atherosclerosis susceptibility genes. **A.J. Lusis.** UCLA.
6:30 A mouse model of type I diabetes accelerated atherosclerosis. **I. Goldberg.** Columbia Univ. Med. Ctr.
7:00 Blitz Presentations. Several short presentations featuring exciting new data, hot from the lab bench and of interest to the vascular biology community. These are ongoing unpublished studies. The purpose of these presentations is to give the audience a taste of what is developing in the field and for the audience to give feedback and suggestions about how to pursue these observations.

Pharmacology

263. BEING HEARD: THE MICROINEQUITIES THAT TILT THE PLAYING FIELD

Workshop

(*Sponsored by:* ASPET's Women in Pharmacology Committee and APS's Women in Physiology Committee)

MON. 8:00 AM—CONVENTION CENTER, ROOM 201

CHAIRED: *S.F. STEINBERG, H.H. BREVIG, AND K.H. BERECEK*

Career Session

8:00 Overview: women in academic science and engineering — beyond bias and barriers. **J.A. Steitz.** Yale.
8:20 Leveling the playing field: a focus on students. **B.A. Horwitz.** Univ. of California-Davis.
8:40 Institutional strategies to improve the status of women. **J. D'Armiento.** Columbia Univ. Col. of P & S.
9:00 Succeeding in a male-dominated environment. **F.P. Haseltine.** NICHD, NIH.
9:20 Breakout sessions.
10:00 Conclusion.

264. RAY FULLER LECTURE IN THE NEUROSCIENCES

MON. 8:15 AM—CONVENTION CENTER, ROOM 143A/B

Introduction: **E. Sanders-Bush.** Vanderbilt Univ. Sch. of Med.

Speaker: **D.D. Schoepp.** Eli Lilly and Co.

Title: Case Study from Bench to Bedside: Modulators of mGlu2 and mGlu3 Receptors to Treat Psychiatric Disorders

265. RAY FULLER SYMPOSIUM: PROMISE AND PITFALLS IN THE SEARCH FOR NEW DRUGS TARGETED AT METABOTROPIC GLUTAMATE RECEPTORS

Symposium

(*Sponsored by:* The Division for Neuropharmacology)

MON. 9:30 AM—CONVENTION CENTER, ROOM 143A/B

CHAIRED: *D.D. SCHOEPP*

9:30 mGluR5 negative allosteric modulators: in line for multiple clinical proof of concept testing. **V. Mutel.** Addex Pharmaceut., SA, Plan Les Ouates, Switzerland.
10:00 Discussion.
10:05 Roles of mGluRs in synaptic plasticity: implications for therapeutic interventions. **G. Collingridge.** Univ. of Bristol.
10:35 Discussion.
10:40 Allosteric potentiators of metabotropic glutamate receptors as a novel approach for treatment of CNS disorders. **P.J. Conn.** Vanderbilt Univ.
11:10 Discussion.
11:15 mGlu receptors: beyond the regulation of synaptic transmission. **F. Nicoletti.** Univ. of Catania, Italy.
11:45 Discussion.

266. CARDIOVASCULAR PHARMACOGENOMICS: FROM THEORY TO PRACTICE?

Symposium

(*Sponsored by:* The Division for Cardiovascular Pharmacology; the Division for Clinical Pharmacology, Pharmacogenomics, and Translational Medicine; and the Division for Systems and Integrative Pharmacology)

MON. 9:30 AM—CONVENTION CENTER, ROOM 143C

CHAIRED: *D.M. RODEN*

COCHAIRED: *J.A. JOHNSON*

Pharmacogenomics

9:30 Chair's introduction.
9:35 Genetics and genomics of antiarrhythmic therapy. **D.M. Roden.** Vanderbilt Univ. Sch. of Med.
10:05 Discussion.
10:10 Genetic and genomic markers of response to antihypertensive therapy. **J.A. Johnson.** Univ. of Florida.
10:40 Discussion.
10:45 Predicting drug response in hypercholesterolemia. **R.M. Krauss.** Children's Hosp. Oakland Res. Inst., CA.
11:15 Discussion.
11:20 Pre-prescription genotyping in heart failure: a concept whose time is near? **M.R. Bristow.** Univ. of Colorado Hlth. Sci. Ctr.
11:50 Discussion.

267. CHILD AND ADOLESCENT DEPRESSION: WHY DO KIDS AND ADULTS RESPOND DIFFERENTLY TO ANTIDEPRESSANTS?

Symposium

(*Sponsored by:* The Division for Behavioral Pharmacology; the Division for Clinical Pharmacology, Pharmacogenomics, and Translational Medicine; the Division for Neuropharmacology; and the Division for Systems and Integrative Pharmacology)

MON. 9:30 AM—CONVENTION CENTER, ROOM 142

CHAIRED: *D.B. BYLUND*

Developmental Pharmacology

9:30 Introduction. **D.B. Bylund.** Univ. of Nebraska Med. Ctr.
9:40 Comparison of major depressive disorder and its treatment in children and adults. **C.J. Kratochvil.** Univ. of Nebraska Med. Ctr.
10:05 Discussion.
10:10 Psychotropic medications for children and adolescents. **R.T. Brown.** Temple Univ.
10:35 Discussion.
10:40 Behavioral neuropharmacology of adolescent brain development. **L.P. Spear.** Binghamton Univ, SUNY.
11:05 Discussion.
11:10 The forced-swim test and learned helplessness paradigm in juvenile rats model the lack of efficacy of tricyclic antidepressants in childhood and adolescent depression. **A.L. Reed, H.K. Happe, J.C. Anderson, F. Petty and D.B. Bylund.** Univ. of Nebraska Med. Ctr. and Creighton Univ. **(716.1)**
11:25 Discussion.
11:30 Animal models of juvenile depression. **K.H. Happe.** Creighton Univ. Sch. of Med.
11:55 Discussion.

268. POSTTRANSCRIPTIONAL REGULATION OF GENE EXPRESSION

Symposium

(*Sponsored by:* The Division for Molecular Pharmacology; the Division for Cardiovascular Pharmacology; the Division for Drug Discovery, Development and Regulatory Affairs; and the Division for Systems and Integrative Pharmacology)

MON. 9:30 AM—CONVENTION CENTER, ROOM 140B

CHAIRED: *J.D. PORT*

9:30 Chair's introduction.
9:35 Posttranscriptional regulation of gene expression: a regulatory paradigm for G-protein coupled receptors. **J.D. Port.** Univ. of Colorado Hlth. Sci. Ctr.
10:05 Discussion.
10:10 Role of TTP in modulation of TNF alpha expression. **P.J. Blackshear.** NIEHS, NIH, Research Triangle Park.
10:40 Discussion.
10:45 Cell signaling-regulated phosphorylation of RNA binding proteins controls the expression of select labile transcripts. **R. Gherzi.** Natl. Inst. for Cancer Res., Genoa.

11:15 Discussion.
11:20 Posttranscriptional regulation of cyclin expression in breast cancer. **R.S. Hartley.** Univ. of New Mexico Hlth. Sci. Ctr.
11:50 Discussion.

269. DIVISION FOR DRUG DISCOVERY, DEVELOPMENT AND REGULATORY AFFAIRS PROGRAMMING: ASSESSING ABUSE LIABILITY FOR DRUG DISCOVERY AND DEVELOPMENT: A CHANGING ENVIRONMENT

Symposium

MON. 9:30 AM—CONVENTION CENTER, ROOM 141

CHAIRED: *R.H. ALPER*

9:30 Introduction. **R.H. Alper.** Pfizer, Inc.
9:35 Cellular and molecular mechanisms contributing to substance abuse and neurotoxicity. **A.E. Fleckenstein.** Univ. of Utah.
10:05 Discussion.
10:10 The translation and application of rodent models for abuse liability testing. **A. Mead.** Pfizer Ltd., Sandwich.
10:40 Discussion.
10:45 Clinical abuse liability assessments. **E.M. Sellers.** Ventana Clin. Res. Corp., Toronto.
11:15 Discussion.
11:20 Regulatory environment in abuse liability assessments. **D.C. Throckmorton.** FDA, Rockville, MD.
11:50 Discussion.

270. PUBLIC POLICY SESSION: NIH AT THE CROSSROADS: HOW DIMINISHED FUNDS WILL IMPACT BIOMEDICAL RESEARCH AND WHAT SCIENTISTS CAN DO ABOUT IT

MON. 12:45 PM—CONVENTION CENTER, BALLROOM C

CHAIRED: *L.T. FURCHT*

Elias Zerhouni, M.D.
NIH Director

The Honorable John Porter
Hogan & Hartson
and former Chair of the U.S. House of Representatives
Labor/HHS Appropriations Subcommittee

Rep. Porter will provide a legislative overview of the FY2008 outlook for the NIH. He will discuss how scientists have an obligation as citizens to become politically active and aware and make suggestions for what needs to be done to make an impact. Dr. Zerhouni will provide details on the current state of the NIH enterprise and offer projections based on the FY 2008 budget.

271. DIVISION FOR BEHAVIORAL PHARMACOLOGY PROGRAMMING: IT'S ALL THE RAVE: BEHAVIORAL, NEUROPHARMACOLOGICAL, AND TOXIC EFFECTS OF MDMA AND METHAMPHETAMINE

Symposium

MON. 3:00 PM—CONVENTION CENTER, ROOM 140B

CHAIRED: *M.A. NADER*

COCHAIRED: *M.L. BANKS*

3:00 Introduction. **M.A. Nader.** Wake Forest Univ. Sch. of Med.
3:05 Tolerance to the reinforcing and subjective effects of MDMA in humans. **A.C. Parrott.** Univ. of Wales, Swansea.
3:30 Discussion.
3:35 MDMA- and MA-induced brain changes: imaging studies in nonhuman primates and humans. **U.D. McCann.** Johns Hopkins Univ. Sch. of Med.
4:00 Discussion.
4:05 Ambient temperature interactions related to MDMA abuse: MDMA abuse and neurotoxicity as measured by PET. **M.L. Banks.** Wake Forest Univ. Sch. of Med.
4:30 Discussion.
4:35 Neurochemical alterations and long-term consequences of MA and MDMA abuse. **A.E. Fleckenstein.** Univ. of Utah.
5:00 Discussion.
5:05 The role of serotonin receptors in the behavioral pharmacology of MDMA. **K.A. Cunningham.** Univ. of Texas Med. Branch.
5:30 Discussion.
5:35 Division for Behavioral Pharmacology Business Meeting.

272. EARLY CLINICAL DEVELOPMENT STRATEGIES FOR MONOCLONAL ANTIBODY EXPERIMENTAL AGENTS IN NON-ONCOLOGY INDICATIONS

Symposium

(*Sponsored by:* The Division for Clinical Pharmacology, Pharmacogenomics, and Translational Medicine; the Division for Cardiovascular Pharmacology; and the Division for Drug Discovery, Development and Regulatory Affairs)

MON. 3:00 PM—CONVENTION CENTER, ROOM 141

CHAIRED: *M.A. MASCELLI*

3:00 Introduction. **M.A. Mascelli.** Centocor Inc., Malvern, PA.
3:05 Anti IL-12/23 monoclonal antibody for psoriasis: biomarker validation of mechanism-of-action and disease pathogenesis. **K.D. Cooper.** Case Western Reserve Univ. and Univ. Hosps. of Cleveland.
3:35 Discussion.
3:40 Early development of drugs with new mechanisms of action: question-based rather than study-based development. **A.F. Cohen.** Ctr. for Human Drug Res., Leiden.
4:10 Discussion.

4:15 Immune response analysis for monoclonal antibodies in development: past experience and new expectations. **C.L. Wagner.** Centocor Inc., Malvern, PA.
4:45 Discussion.
4:50 Regulatory considerations related to the design of early clinical trials of monoclonal antibody experimental agents. **L. Marzella.** FDA, Silver Spring, MD.
5:20 Discussion.

273. RECENT ADVANCES IN OUR UNDERSTANDING OF THE FLAVIN-CONTAINING MONOOXYGENASES: ROLE IN DISEASE AND ADVERSE DRUG REACTIONS

IN MEMORY OF DANIEL ZIEGLER

Symposium

(*Sponsored by:* The Division for Drug Metabolism; the Division for Systems and Integrative Pharmacology; and the Division for Toxicology)

MON. 3:00 PM—CONVENTION CENTER, ROOM 143C

CHAIRED: *R.N. HINES*

COCHAIRED: *D.E. WILLIAMS*

Pharmacogenomics

3:00 Introduction/overview and dedication to Daniel M. Ziegler. **F.F. Kadlubar.** FDA, Jefferson, AR.
3:20 FMO1 and FMO3 developmental expression: mechanisms and variability. **R.N. Hines.** Med. Col. of Wisconsin.
3:55 Discussion.
4:00 FMO genetic polymorphisms and impact on function. **E.A. Shephard.** University Col. London.
4:35 Discussion.
4:40 FMO and drug hypersensitivity. **C.K. Svensson.** Purdue Univ. Col. of Pharm., Nursing, and Hlth. Sci.
5:15 Discussion.
5:20 Summary and future direction of FMO research. **D.E. Williams.** Oregon State Univ.

274. DIVISION FOR TOXICOLOGY PROGRAMMING: TOXICOGENOMICS APPROACHES FOR EVALUATING DRUG AND CHEMICAL TOXICITY

Symposium

MON. 3:00 PM—CONVENTION CENTER, ROOM 142

CHAIRED: *C.J. OMIECINSKI*

Pharmacogenomics

3:00 Gene expression profiling in primary human hepatocytes as predictors of interindividual variability in chemical response. **C.J. Omiecinski.** Penn State.
3:25 Discussion.
3:30 Application of toxicogenomics towards idiosyncratic hepatotoxicity. **J.F. Waring.** Abbott Labs.
3:55 Discussion.
4:00 The Comparative Toxicogenomics Database: promoting understanding about the mechanisms of chemical actions. **C. Mattingly.** Mount Desert Island Biol. Lab., Salisbury Cove, ME.
4:25 Discussion.
4:30 Genetic and genomic approaches to predicting chemical toxicity. **C.A. Bradfield.** Univ. of Wisconsin.
4:55 Discussion.
5:00 Data analytic platforms and methods for mining proteome data and its integration with genomic information. **M.W. McIntosh.** Fred Hutchinson Cancer Res. Ctr.
5:25 Discussion.

275. IMAGING LOCALIZED CAMP SIGNALING DYNAMICS ORGANIZED BY AKAP SCAFFOLD PROTEINS AND PHOSPHODIESTERASES

Symposium

(*Sponsored by:* The Division for Molecular Pharmacology; the Division for Cardiovascular Pharmacology; and the Division for Neuropharmacology)

MON. 3:00 PM—CONVENTION CENTER, ROOM 143A/B

CHAIRED: *M.L. DELL'ACQUA*

3:00 Cell signaling in space and time. **J.D. Scott.** Oregon Hlth. & Sci. Univ.
3:25 Discussion.
3:30 Coordination of neuronal cAMP and calcium signaling by AKAP scaffolding. **M.L. Dell'Acqua.** Univ. of Colorado at Denver Hlth. Sci. Ctr.
3:55 Discussion.
4:00 Local cAMP signaling regulation of T-cell activation. **K. Taskén.** Univ. of Oslo.
4:25 Discussion.
4:30 Imaging local cAMP and PKA dynamics in cardiac myocytes. **M. Zaccolo.** Univ. of Padua.
4:55 Discussion.
5:00 Functional segregation of prostaglandin- and isoproterenol-induced cAMP signals. **T.C. Rich, W. Xin, A.L. Britain and J.W. Karpen.** Univ. of South Alabama Col. of Med. and Oregon Hlth. & Sci. Univ. **(722.7)**
5:15 Discussion.

Visit The Exhibits

Sunday–Monday

9:00 AM – 4:00 PM

Tuesday

9:00 AM – 3:30 PM

276. DIVISION FOR CARDIOVASCULAR PHARMACOLOGY JUNIOR SCIENTISTS COMPETITION

Oral

MON. 3:00 PM—CONVENTION CENTER, ROOM 208A/B

CHAIRED: *E. SONGU-MIZE*

COCHAIRED: *A.A. MILLER AND K.M. FETALVERO*

3:00 Introduction. **E. Songu-Mize.** LSU Hlth. Sci. Ctr., New Orleans.

Graduate Student Presentations:

3:05 Diminished MnSOD contributes to endothelial progenitor cell dysfunction, impaired angiogenesis and wound healing in type 2 diabetes. **E.J. Marrotte.** Michigan State Univ. (Advisor: A. Chen).

3:25 Molecular characterization of the 8-iso-$PGF_{2\alpha}$ interaction with the thromboxane A_2 receptor and its signaling mechanisms in human platelets. **F.T. Khasawneh.** Univ. of Illinois at Chicago (Advisor: G. Le Breton).

3:45 Rosuvastatin provides pleiotropic protection against pulmonary hypertension, right ventricular hypertrophy and coronary endothelial dysfunction in rats. **X. Sun.** Univ. of Alabama at Birmingham (Advisor: D.D. Ku).

Postdoctoral Scientist Presentations:

4:05 ADP stimulates human endothelial cell migration via P2Y1 receptor-mediated MAPK pathways. **J. Shen.** Cleveland Clin. Fndn. (Mentor: P.E.DiCorleto)

4:25 Caveolin-1 potentiates Src and Akt signaling in isoflurane-induced cardiac protection. **Y.M. Tsutsumi.** UCSD. (Mentor: D. Roth)

4:45 View the following Graduate Student and Postdoctoral Scientist runners-up posters before and after the session:

Graduate Student Runners-Up Posters:

Ethanol preconditioning is dependent on the activation of 5'-AMP-activated protein kinase. **F.S. Gaskin.** Univ. of Missouri (Advisor: R.J. Korthuis).

Overexpression of the inward rectifier K^+ current (IK1) accelerates and stabilizes rotors. **S.F. Noujaim.** SUNY Upstate Med. Univ. (Advisor: J. Jalife).

Chemical genetic analysis of glycome regulation of vasculogenesis. **S.M. Piecewicz.** Harvard, MIT (Advisor: S.Sengupta).

Estrogen decreases mitochondrial ROS production in human brain endothelial cells. **A. Razmara.** Univ. of California-Irvine (Advisor: S.P. Duckles).

Postdoctoral Scientist Runner-Up Poster:

Basal and ACh-stimulated intracellular Ca^{2+} signals in intact endothelium originate from IP_3-sensitive stores. **J. Ledoux.** Univ. of Vermont (Mentor: M.T. Nelson).

277. DIVISION FOR CARDIOVASCULAR PHARMACOLOGY BENEDICT R. LUCCHESI DISTINGUISHED LECTURE

MON. 5:00 PM—CONVENTION CENTER, ROOM 208A/B

CHAIRED: *D.D. KU*

5:00 Introduction and award presentation.

5:20 A Novel Cardioprotective Paradigm: The CYP450 Pathway of Arachidonic Acid Metabolism. **G.J. Gross.** Med. Col. of Wisconsin.

Physiology

278. CLAUDE BERNARD DISTINGUISHED LECTURESHIP OF THE APS TEACHING OF PHYSIOLOGY SECTION

MON. 8:00 AM—CONVENTION CENTER, ROOM 145B

Speaker: **H. Jason.** Univ. of Colorado.

Title: Becoming a Truly Helpful Teacher: Considerably More Challenging, and Potentially Far More Fun, Than Merely Doing Business As Usual

279. HUGH DAVSON DISTINGUISHED LECTURESHIP OF THE CELL AND MOLECULAR PHYSIOLOGY SECTION

MON. 10:30 AM—CONVENTION CENTER, BALLROOM B

Speaker: **D. Clapham.** Harvard Med. Sch.

Title: Ion Channels: Bacteria to Brain

280. AUGUST KROGH DISTINGUISHED LECTURESHIP OF THE APS COMPARATIVE AND EVOLUTIONARY PHYSIOLOGY SECTION

MON. 2:00 PM—CONVENTION CENTER, ROOM 146B

Extra Cardiac Chambers. **D.R. Jones.** Killam Univ., Canada.

281. JOSEPH ERLANGER DISTINGUISHED LECTURESHIP OF THE APS CENTRAL NERVOUS SYSTEM SECTION

MON. 3:15 PM—CONVENTION CENTER, BALLROOM B

Speaker: **E. Kandel.** Columbia Univ.

Title: The Long and Short of Long-Term Memory: Molecular Mechanisms for Perpetuating Learning-Specific Growth

282. BEING HEARD: THE MICROINEQUITIES THAT TILT THE PLAYING FIELD

Symposium

(*Sponsored by:* ASPET Women in Pharmacology and APS Women in Physiology Committees)

MON. 8:00 AM—CONVENTION CENTER, ROOM 201

CHAIRED: *S.F. STEINBERG, H.H. BREVIG, AND K.H. BERECEK*

Career Session

8:00 Overview: women in academic science and engineering — beyond bias and barriers. **J.A. Steitz.** Yale Univ.
8:20 Leveling the playing field: a focus on students. **B.A. Horwitz.** Univ. of California-Davis.
8:40 Institutional strategies to improve the status of women. **J. D'Armiento.** Columbia Univ. Col. of P & S.
9:00 Succeeding in a male-dominated environment. **F.P. Haseltine.** NICHD, NIH.
9:20 Breakout sessions.
10:00 Conclusion.

283. ENDOTHELIAL CELL MECHANOBIOLOGY: PATHOLOGIES AND MECHANISMS OF MECHANOTRANSDUCTION

Symposium

(*Sponsored by:* The Biomedical Engineering Society)

MON. 8:00 AM—CONVENTION CENTER, ROOM 146B

CHAIRED: *P.J. BUTLER AND J. TARBELL*

8:00 Introduction. **P.J. Butler.** Penn State.
8:10 Endothelial phenotypes in vivo: hemodynamics and patho-susceptibility. **P.F. Davies.** Univ. of Pennsylvania.
8:40 Implications of glucocalyx pertubation for endothelial mechanotransduction. **H. Vink.** Maastricht Univ., The Netherlands.
9:00 The functional significance of membrane rafts and caveolae in localization of mechanosensory signaling complexes. **V. Rizzo.** Temple Univ.
9:20 A mechanism for force-induced protein activation: vinculin recruitment by talin. **R. Kamm.** MIT.
9:40 On the transmission of fluid shear stress across the endothelial glycocalyx and cytoskeletal reorganization. **S. Weinbaum.** City Col. of CUNY.

284. FRONTIERS IN THE CELLULAR AND MOLECULAR PHYSIOLOGY OF THE HEPATIC MICROCIRCULATION

Symposium

(Supported by an educational grant from Carl Zeiss MicroImaging, Inc.)

(*Sponsored by:* APS Gastrointestinal and Liver Physiology Section)

MON. 8:00 AM—CONVENTION CENTER, ROOM 147B

CHAIRED: *R.W. BROCK AND A. FOX-ROBICHAUD*

8:00 Cell-cell interaction and apoptosis in hepatic endotoxemia. **B. Vollmar.** Univ. Rostock, Germany.
8:30 Biomedical application of metabolome analyses to mine gaseous signal transducers in the liver. **M. Suematsu.** Keio Univ. Sch. of Med.
9:00 The role of the sinusoidal endothelial cell in hepatic pathophysiology. **M. Clemens.** Univ. of North Carolina at Charlotte.
9:30 Chemokines and cross-talk in leukocyte recruitment to the hepatic endothelium. **A. Fox-Robichaud.** McMaster Univ., Canada.

285. FUNCTIONAL IMAGING OF AUTONOMIC CIRCUITS: NEW FRONTIERS IN OPTICAL APPROACHES AND APPLICATIONS

Symposium

(Supported by an educational grant from SciMedia, Inc.)

(*Sponsored by:* APS Neural Control and Autonomic Regulation Section)

MON. 8:00 AM—CONVENTION CENTER, ROOM 146A

CHAIRED: *J. POTTS AND R. ROGERS*

8:00 New frontiers in functional imaging of autonomic circuits. **J. Potts.** Univ. of Missouri-Columbia.
8:05 Optical approaches to neuronal imaging. **A. Grinvald.** Weizmann Inst. of Sci., Rehovot.
8:30 Spatiotemporal activity patterns revealed by functional imaging during respiratory rhythmogenesis. **R. Rogers.** Univ. of Delaware.
8:55 Optical analysis of neural circuit formation in the embryonic brain. **K. Sato.** Tokyo Med. and Dent. Univ.
9:20 Imaging of respiratory-related population activity with single cell resolution in rhythmically active slices. **M. Mueller.** Univ. of Goettingen.
9:45 General discussion.

286. HYPOXIA AND CANCER

Symposium

(*Sponsored by:* APS Hypoxia Group)

MON. 8:00 AM—CONVENTION CENTER, ROOM 146C

CHAIRED: *G.L. SEMENZA*

Oxidative Stress/Hypoxia

8:00 The role of hypoxia-inducible factor 1 in human cancer. **G.L. Semenza.** Johns Hopkins Univ. Sch. of Med.
8:30 The role of hypoxia in Akt-mediated melanocyte transformation. **M. Broome-Powell.** Stanford Univ.
9:00 The role of hypoxia in tumor cell differentiation. **L. Poellinger.** Karolinska Inst.
9:30 Mechanisms of hypoxia-induced resistance to radiation therapy. **M.W. Dewhirst.** Duke Univ. Med. Ctr.

287. EFFECTIVE USE OF COURSE MANAGEMENT SYSTEMS TO ENHANCE STUDENT LEARNING

Symposium

(*Sponsored by:* APS Teaching of Physiology Section)

MON. 10:30 AM—CONVENTION CENTER, ROOM 154A

CHAIRED: *J. KIBBLE*

Education Session

10:30 Electronic course management: a tool for improving student skills? **B. Ramirez.** Univ. of Santiago of Chile.
10:55 Electronic course management as a tool to facilitate collaborative learning. **P. Sokolove.** Univ. of Maryland Baltimore County.
11:20 Investigating the intersections of teaching and learning by KEEPing faculty practice and student learning visible. **W.M. Schlegel.** Indiana Univ. Sch. of Med.
11:45 Investigating software driven curriculum and the use of electronic media in course management: evaluation by outcomes assessment. **J. Kingsbury.** Mohave Col., AZ.
12:10 General discussion.

288. MCS YOUNG INVESTIGATOR SYMPOSIUM: COMPUTATIONAL MICROCIRCULATION

Symposium

(*Sponsored by:* The Microcirculatory Society)

MON. 10:30 AM—CONVENTION CENTER, ROOM 145A

CHAIRED: *T.W. SECOMB*

10:30 Integrative computational physiology of the vasculature: NO and Ca^{2+} dependent signaling in the regulation of microcirculatory tone. **N. Tsoukias.** Florida Intl. Univ.
10:50 Computational modeling of microvascular blood flow regulation incorporating myogenic and shear-dependent responses. **B.E. Carlson.** Univ. of Washington.
11:10 Using mathematical and computational modeling to study dynamic regulation of tissue oxygen delivery. **D. Goldman.** Univ. of Western Ontario.
11:30 Integrated modeling of cellular energetics and substrate transport to analyze data on cardiac tissue. **F. Wu.** Med. Col. of Wisconsin.
11:50 Role of reactive oxygen species in the microcirculation. **M. Kavdia.** Univ. of Arkansas.
12:10 Multi-cell simulations of microvascular network growth and adaptation. **S.M. Peirce-Cottler.** Univ. of Virginia.

No Smoking
In Session Rooms, Poster or Exhibit Area

289. MOLECULAR REGULATION OF RENAL EPITHELIAL TRANSPORT PROTEINS IN THE NEPHRON: LESSONS FROM ONTOGENY AND DISEASE

Symposium

(*Sponsored by:* APS Renal Section and The American Society for Nephrology)

MON. 10:30 AM—CONVENTION CENTER, ROOM 146C

CHAIRED: *Y.H. KIM AND L.M. SATLIN*

Transporters

10:30 Regulation of renal collecting duct development by the p53 gene family. **S.S. El-Dahr.** Tulane Univ. Hlth. Sci. Ctr.
11:00 The role of hensin in the differentiation of intercalated cells and the response to metabolic acidosis. **G.J. Schwartz.** Univ. of Rochester Med. Ctr.
11:30 Mechanisms of renal K secretion: lessons from ontogeny and disease. **L.M. Satlin.** Mount Sinai Med. Ctr.
12:00 Ontogeny of NaCl and water transporters in the collecting duct. **Y.H. Kim.** Emory Univ. Sch. of Med.

290. NEW HORIZONS IN CARDIOVASCULAR AGING

Symposium

(*Sponsored by:* APS Cardiovascular Section)

MON. 10:30 AM—CONVENTION CENTER, ROOM 146A

CHAIRED: *G. KALEY AND Z. UNGVARI*

10:30 Chair's introduction.
10:35 Vascular inflammation in aging. **Z. Ungvari.** New York Med. Col.
11:00 Gender and the aging vasculature. **S.T. Davidge.** Univ. of Alberta.
11:25 Stem cells and the aging heart. **P. Anversa.** New York Med. Col.
11:50 New theories of aging and longevity. **S. Austad.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio.

291. OBESITY AND THE CENTRAL NERVOUS SYSTEM

Symposium

(Supported by an educational grant from The Journal of Physiology)

(*Sponsored by:* APS Central Nervous System Section)

MON. 10:30 AM—CONVENTION CENTER, ROOM 146B

CHAIRED: *S. MIFFLIN AND A. STRACK*

Metabolic Abnormalities

10:30 Why some of us get fat and what we can do about it. **B. Levin.** UMDNJ-New Jersey Med. Sch., VA Med. Ctr., East Orange.
11:00 Glucocorticoids and insulin both modulate caloric intake through actions on the brain. **M. Dallman.** UCSF.

11:30 Hypothalamic leptin regulation of energy homeostasis and glucose metabolism. **G. Morton.** Harborview Med. Ctr., Univ. of Washington.
12:00 Sympathetic nervous system in obesity. **M. Tuck.** UCLA, VA Med. Ctr.

292. UNDERSTANDING THE ROLE OF THE PANCREAS IN DIGESTION: PLACING CURRENT UNDERSTANDING IN A HISTORICAL PERSPECTIVE

Symposium

(*Sponsored by:* APS History of Physiology Group)

MON. 10:30 AM—CONVENTION CENTER, ROOM 147A

CHAIRED: *J.A. WILLIAMS AND J. ADELSON*

10:30 Placing the pancreas in a historical setting. **J.W. Adelson.** UCSF.
10:45 Pavlov and the pancreas: reflections on a scientist's style. **D.P. Todes.** Johns Hopkins Univ.
11:15 Ernest Starling and the discovery of secretin. **J. Henderson.** St. George's, Univ. of London.
11:45 Reducing the acinar cell to a molecular machine: from here to there. **J.A. Williams.** Univ. of Michigan.
12:15 Can we meld the past and the present? **J.W. Adelson.** UCSF.

293. GUIDE FOR SUCCESSFUL COLLABORATION: FROM THE HANDSHAKE TO THE COLLABORATIVE RESEARCH AGREEMENT

Symposium

(*Sponsored by:* APS Career Opportunities in Physiology Committee)

MON. 2:00 PM—CONVENTION CENTER, ROOM 159

CHAIRED: *D.G. JOHNS AND C.F.T. UYEHARA*

Career Session

2:00 Initiating successful collaborations: a how-to guide. **S.W. Watts.** Michigan State Univ.
2:20 The many facets of collaboration with the pharmaceutical industry. **S.A. Douglas.** GlaxoSmithKline.
2:40 Collaborative research agreements: getting through the legal hurdles. **J. Winchester.** U.S. Army Med. Res. and Material Command, Fort Detrick.
3:00 Collaboration with the military or veterans administration: getting access to military/VA resources. **J. Harris.** U.S. Army, Congressionally Directed Military Res. Prog.
3:20 Roundtable discussion.

294. ENGINEERING VASCULAR CELL FUNCTION USING NANOSCALE CUES

Symposium

(*Sponsored by:* The Biomedical Engineering Society and The Microcirculatory Society)

MON. 3:15 PM—CONVENTION CENTER, ROOM 154A

CHAIRED: *B.P. HELMKE AND R.J. PRICE*

3:15 Controlling cardiovascular microenvironments at the micro and nanoscale. **T. Desai.** UCSF.
3:45 Grooved surfaces to direct endothelial cell spreading and migration on vascular templates. **R.J. Composto.** Univ. of Pennsylvania.
4:15 Engineering functional microvessels in vitro. **J. Tien.** Boston Univ.
4:45 Branching from engineered tubes. **C.M. Nelson.** Lawrence Berkeley Natl. Lab.

295. INTERCELLULAR REGULATION OF SMOOTH MUSCLE CONTRACTION

Symposium

(*Sponsored by:* APS Respiration Section)

MON. 3:15 PM—CONVENTION CENTER, ROOM 145A

CHAIRED: *M. SANDERSON AND S. GUNST*

3:15 Local potassium signaling couples neuronal activity to vascular function. **M. Nelson.** Univ. of Vermont.
3:45 Regulation of smooth muscles by pacemaker cells. **K. Sanders.** Univ. of Nevada Sch. of Med.
4:15 Signalling from the extracellular matrix to the cytoskeleton in the regulation of airway smooth muscle function. **S. Gunst.** Indiana Univ. Sch. of Med.
4:45 Ca^{2+} oscillations regulate airway SMC contraction. **M. Sanderson.** Univ. of Massachusetts Med. Ctr.

296. MUSCLE MECHANICS: MOLECULAR PROPERTIES TO CONTRACTILE FUNCTION

Symposium

(*Sponsored by:* APS Muscle Biology Group)

MON. 3:15 PM—CONVENTION CENTER, ROOM 147B

CHAIRED: *K.S. CAMPBELL*

3:15 Spatial and kinetic aspects of cardiac versus skeletal muscle contractile activation. **M. Regnier.** Univ. of Washington.
3:45 Myosin structural dynamics and function in the face of muscle disease and (in)activity. **D.A. Lowe.** Univ. of Minnesota.
4:15 Regulation of power output in cardiac myocytes. **K.S. McDonald.** Univ. of Missouri-Columbia.
4:45 Measurements and models of acto-myosin kinetics. **K.S. Campbell.** Univ. of Kentucky.

297. NOVEL ASPECTS OF THE REGULATION AND PHYSIOLOGY OF NHE1

Symposium

(*Sponsored by:* APS Cell and Molecular Physiology Section)

MON. 3:15 PM—CONVENTION CENTER, ROOM 146C

CHAIRED: *D. BARBER AND S.F. PEDERSEN*

Transporters

3:15 The role of NHE1 in driving metastasis and invasion: recent advances in understanding the dynamics of tumor cell-ECM interactions. **S. Reshkin.** Univ. of Bari.

3:40 A broader view of ion transport proteins: H^+ efflux, actin anchoring, and scaffolding by NHE1. **M. Meima.** UCSF.

4:05 Structural and functional aspects of the Na^+/H^+ exchanger 1 and its obligatory binding partner CHP. **S. Wakabayashi.** Nat. CV Ctr. Res. Inst., Japan.

4:30 Regulation of cell survival by the NHE1 Na^+/H^+ exchanger. **J. Schelling.** Case Western Reserve Univ.

4:55 NHE1 creates an extracellular pH nanoenvironment involved in cell migration. **C. Stock.** Univ. of Münster.

298. SUSPENDED ANIMATION — FACT OR FICTION?

Symposium

(*Sponsored by:* APS Environmental and Exercise Physiology Section)

MON. 3:15 PM—CONVENTION CENTER, ROOM 147A

CHAIRED: *L.R. LEON AND K.L. RYAN*

3:15 Mechanisms of thermoregulatory control and the physiological basis for suspended animation. **C.J. Gordon.** US EPA, Research Triangle Park.

3:45 Protective effects of hibernation on ischemia-reperfusion injury. **H.V. Carey.** Univ. of Wisconsin-Madison.

4:15 Can we save trauma victims with emergency preservation and resuscitation (EPR)? Will EPR be the new CPR? **S. Tisherman.** Univ. of Pittsburgh.

4:45 Protective effect of profound hypothermia in a swine model of hemorrhage. **H.B. Alam.** Massachusetts Gen. Hosp., Harvard Med. Sch.

299. USE OF GENOME VARIATION IN UNDERSTANDING COMPLEX DISEASE AND GENOME REGULATION

Symposium

(*Sponsored by:* APS Physiological Genomics Group)

MON. 3:15 PM—CONVENTION CENTER, ROOM 146A

CHAIRED: *A. KWITEK AND M. STOLL*

3:15 Whole-genome association studies. **M. Stoll.** Univ. of Münster.

3:45 The phenomenon and importance of CRTRs. **D. Nickerson.** Univ. of Washington.

4:15 The identification of CNV (copy number variation) and its impact on disease. **T. Aitman.** Imperial Col., London.

4:45 The use of genetically defined biomarkers: toward personalized medicine. **TBA.**

300. ACTIVITY-DEPENDENT GENE EXPRESSION

Featured Topic

(*Sponsored by:* APS Environmental and Exercise Physiology Section)

MON. 8:00 AM—CONVENTION CENTER, ROOM 147A

CHAIRED: *D. HOOD*

8:00 Activity-dependent gene expression at the neuromuscular junction. **B. Jasmin.** Univ of Ottawa.

8:30 Mitochondrial dysfunction is associated with increased oxidative stress and inflammation, and Nrf2-mediated antioxidant dysregulation with frail aging. **A. Safdar, J.J. Kaczor, M.J. Hamadeh, S. Raha and M.A. Tarnopolsky.** McMaster Univ. and York Univ., Canada. **(767.1)**

8:45 Time course of proteolytic, apoptotic, and cytokine gene expression after run exercise in humans. **U. Raue, E. Louis, B. Jemiolo, Y. Yang and S. Trappe.** Ball State Univ. **(767.2)**

9:00 Effects of prior chronic contractile activity on subsequent denervation-induced apoptosis in skeletal muscle. **M.F.N. O'Leary, S. Kapchinsky and D.A. Hood.** York Univ., Canada. **(767.5)**

9:15 Erythropoietin and its receptor in human skeletal muscle. **H. Rundqvist, C.J. Sundberg, E. Rullman, M. Stahlberg, P. Sundblad, E. Jansson and T. Gustafsson.** Karolinska Inst. **(767.7)**

9:30 Resistance exercise and cyclooxygenase (COX) expression in human skeletal muscle: implications for COX-inhibiting drugs and protein synthesis. **E. Weinheimer, B. Jemiolo, C.C. Carroll, M.P. Harber, J.M. Haus, N.A. Burd, J.K. LeMoine, S. Trappe and T. Trappe.** Ball State Univ. **(767.3)**

9:45 Mitochondrial function and protein expression profile in skeletal muscle from PGC-1α null mice. **P.J. Adhihetty, H. Pilegaard, L. Leick, S. Florit, G. Comes, J. Hidalgo and D.A. Hood.** York Univ., Canada, Univ. of Copenhagen and Univ. of Barcelona. **(767.6)**

301. ANGIOGENESIS AND CELL-BASED THERAPIES

Featured Topic

(*Sponsored by:* APS Cardiovascular Section)

MON. 8:00 AM—CONVENTION CENTER, ROOM 154A

CHAIRED: *H.L. CAI AND J. BISCHOFF*

8:00 Nitric oxide and netrin-1 induction of angiogenesis: signaling mechanisms, crosstalks and future directions. **H.L. Cai.** UCLA.

8:30 Endothelial cell growth and differentiation in hemangioma — an endothelial tumor that undergoes spontaneous regression. **J. Bischoff.** Children's Hosp. Boston, Harvard Med. Sch.

9:00 Lung microvascular resident endothelial progenitor cells exhibit high vasculogenic capacity. **D.F. Alvarez, M.C. Yoder, L. Huang, J.A. King, T. Stevens and M.C. Yoder.** Univ. of South Alabama and Indiana Univ., Indianapolis. **(744.4)**

9:15 Diminished MnSOD contributes to endothelial progenitor cell dysfunction, impaired angiogenesis and wound healing in type 2 diabetes. **E.J. Marrotte, J.S. Hakim, D-D. Chen and A.F. Chen.** Michigan State Univ. **(893.19)**

9:30 Hepatocyte growth factor is a key paracrine molecule mediating the angiogenic and therapeutic effects of adipose stromal cells. **L. Cai, B.H. Johnstone, T.G. Cook, Z. Liang, D. Traktuev, K.G. Cornetta, E.D. Rosen and K.L. March.** Indiana Univ. Sch. of Med. **(744.6)**

9:45 Biologic nanoparticles and arterial response to injury. **M.A. Kraemer, G. Farell-Baril, J.C. Lieske and V.M. Miller.** Mayo Clin. **(744.1)**

302. ENDOTHELIAL AND EPITHELIAL SIGNALING IN LUNG

Featured Topic

(*Sponsored by:* APS Respiration Section)

MON. 8:00 AM—CONVENTION CENTER, ROOM 145A

CHAIRED: *J. BHATTACHARYA*

8:00 RBC induce endothelial ROS in hypoxia. **R. Keifman.** Univ. of Hamburg.

8:15 Fluorescence imaging of endothelial connexin43-mediated proinflammatory signaling in lung. **K. Parthasarathi.** Columbia Univ., St. Luke's-Roosevelt Hosp. Ctr.

8:30 High vascular pressure leads to P450 epoxygenase-dependent TRPV4 activation and endothelial injury in mouse lung. **M-Y. Jian, W. Liedtke and M.I. Townsley.** Univ. of South Alabama and Duke Univ. Med. Ctr. **(894.3)**

8:45 Deletion of Cx40 combined with conditional deletion of endothelial cell Cx43 induces lung edema, and lung fibroblast proliferation. **B.E. Isakson, S.I. Ramos and B.R. Duling.** Univ of Virginia. **(894.11)**

9:00 Paradoxical response of endothelial ROS production in peroxiredoxin 6 null mice to ischemia. **S. Chatterjee, S.I. Feinstein, N. Hong and K. DeBolt.** Univ. of Pennsylvania. **(894.5)**

9:15 Activation of Toll-like receptors is a critical determinant of lung neutrophil sequestration and injury induced by high tidal volume mechanical ventilation.° **G. Hu, D.J. Visintine, M. Castellon, S.Y. Husain, E.G. Votta-Velis, X. Gao, A.B. Malik and R.D. Minshall.** Univ. of Illinois Col. of Med. **(894.16)**

9:30 Dysfunction of CFTR in alveolar macrophages and neutrophils propagates production of proinflammatory cytokines and exacerbates acute lung injury in mice. **X. Su, J.W. Lee, Y. Song and M.A. Matthay.** UCSF. **(607.9)**

9:45 NO-regulated negative feedback loop protects lung endothelial barrier function in hydrostatic stress. **J. Yin, H. Kuppe and W.M. Kuebler.** Charité, Med. Univ. Berlin and German Heart Inst., Berlin. **(894.2)**

303. EPITHELIAL TRANSPORTERS

Featured Topic

(*Sponsored by:* APS Epithelial Transport Group)

MON. 8:00 AM—CONVENTION CENTER, ROOM 154B

CHAIRED: *A. MCDONOUGH AND N. PASTOR-SOLER*

Transporters

8:00 The carboxyl terminus of WNK4 suppresses forward trafficking of the thiazide-sensitive cotransporter. **A.R. Subramanya, J.B. Wade, D.H. Ellison and P.A. Welling.** Univ. of Maryland Sch. of Med. and Oregon Hlth. & Sci. Univ. **(938.14)**

8:15 Phosphorylation of focal adhesion kinase at tyrosine 407 and integrin β1 regulate NKCC cotransporter in *Fundulus heteroclitus*. **F. Katoh, B.N.G. Lynch, R.R.F. Cozzi and W.S. Marshall.** St. Francis Xavier Univ., Canada. **(938.15)**

8:30 Protein kinase A regulates vacuolar H^+-ATPase recycling in epididymal clear cells. **N. Pastor-Soler, C. Smolak, D. Brown and S. Breton.** Univ. Pittsburgh Sch. of Med. and Massachussets Gen. Hosp. and Harvard Med. Sch. **(938.16)**

8:45 High K intake enhanced the inhibition of ENaC induced by arachidonic acid. **P. Sun, Y. Jin and W-H. Wang.** New York Med. Col. **(938.17)**

9:00 Functional regulation of K-Cl cotransport by the nitric oxide pathway, vasoconstrictors and inhibitors of the contractile apparatus in vascular smooth muscle cells. **N.C. Adragna and P.K. Lauf.** Wright State Univ. Boonshoft Sch. of Med. **(938.18)**

9:15 Regulation of cytosolic malate dehydrogenase expression by extracellular DNA. **G.M. Goddard, J. Cook, A. Teixeira and B. Hanss.** Mount Sinai Sch. of Med. and Grinnell Col., IA. **(938.19)**

9:30 Effects of the sodium-hydrogen exchange inhibitor EIPA on chloride secretion in permeabilized monolayers of chick renal proximal tubule cells. **A. Anttila, G. Laverty and S.S. Árnason.** Univ. of Delaware and Univ. of Iceland. **(938.20)**

9:45 pH sensitivity of ammonium transport by Rhbg. **N.L. Nakhoul, S. Abdulnour-Nakhoul, E. Schmidt, R. Doetjes and L.L. Hamm.** Tulane Univ. **(938.21)**

304. ROLE OF L-ARGININE METABOLISM IN CARDIOVASCULAR/RENAL DISEASE

Featured Topic

(*Sponsored by:* APS Water and Electrolyte Homeostasis Section)

MON. 8:00 AM—CONVENTION CENTER, ROOM 155

CHAIRED: *F.K. JOHNSON AND W. DURANTE*

8:00 Arginase and vascular dysfunction. **W. Durante.** Univ. of Missouri-Columbia.

8:30 Role of L-arginine uptake mechanisms in angiotensin II-induced renal vasoconstriction and hypertension. **N. Rajapakse and D. Mattson.** Med. Col. of Wisconsin. **(967.2)**

8:45 Asymmetric dimethylarginine increases the myogenic tone of arterioles due to enhanced release of superoxide. **J. Toth, A. Racz, P.M. Kaminski, M.S. Wolin, Z. Bagi and A. Koller.** New York Med. Col. and Semmelweis Univ. and Univ. of Debrecen, Hungary. **(967.3)**

9:00 Systemic changes in arginase and arginine metabolism in a model of atherosclerosis: a comparison of apoE-/- and C57 mice. **A. Erdely, D. Kepka-Lenhart, R. Salmen, R. Chapman, T. Hulderman, S.M. Morris, Jr. and P. Simeonova.** NIOSH, CDC and Univ. of Pittsburgh. **(967.5)**

9:15 Methionine cycle kinetics and arginine supplementation in endothelial dysfunction of ESRD. **S. Pendse, A. Singh, J. Swain, M. Creager, M. Gerhard and L. Castillo.** Brigham and Women's Hosp., Baylor Col. of Med. and Children's Nutr. Res. Ctr., Houston. **(967.7)**

9:30 The many biologic roles of arginine and arginine metabolites. **R.C. Blantz.** UCSD, VA Med. Ctr.

305. ENERGY BALANCE, EXERCISE, AND CANCER

Featured Topic

(*Sponsored by:* APS Muscle Biology Group)

MON. 10:30 AM—CONVENTION CENTER, ROOM 147B

CHAIRED: *T.M. NOSEK*

10:30 Exercise, diet, and cancer: how energy balance affects cancer development. **H. Thompson.** Colorado State Univ.

11:00 Proliferation/inhibition markers following TPA in skin of exercised, calorie-restricted mice. **B. Herndon, Y. Jiang, N. Wasson, L. Xie, P. Ouyang, T. Quinn and W. Wang.** Univ. of Missouri-Kansas City Sch. of Med. and Kansas State Univ. **(763.1)**

11:15 Molecular links between obesity and breast cancer. **O. Walker and M.K. Connor.** York Univ., Canada. **(763.2)**

11:30 Obesity enhances melanoma tumor growth independently of circulating leptin. **E.L. Brandon, L. Cantwell, J-W. Gu and J.E. Hall.** Univ. of Mississippi Med. Ctr. **(763.3)**

11:45 Metabolic correlates of aging muscle: data from the Baltimore Longitudinal Study of Aging. **A.L. Devonshire, F. Lauretani, A. Bos, C. Chia, S. Ling and L. Ferrucci.** NIA, NIH, Harbor Hosp., Baltimore, Johns Hopkins Univ. and Tuscany Reg. Hlth. Agcy., Florence. **(763.4)**

306. GAP JUNCTIONS MEDIATING CELL-CELL COMMUNICATION IN THE VASCULAR WALL

Featured Topic

(*Sponsored by:* APS Cardiovascular Section)

MON. 10:30 AM—CONVENTION CENTER, ROOM 155

CHAIRED: *B.E. ISAKSON*

10:30 Selective gap junctions between endothelium and smooth muscle equal selective messages? **B.E. Isakson.** Univ. of Virginia Hlth. Sci. Syst.

11:00 Role of gap junctions in leukocyte-endothelial interactions. **B.R. Kwak.** Univ. Hosp. Geneva.

11:30 Coarctation induces increased Cx43 expression by aortic endothelium. **E.C. Parkin, D.T. Kurjiaka, A.M. Simon and J.M. Burt.** Univ. of Arizona. **(759.4)**

11:45 Lipopolysaccharide plus hypoxia and reoxygenation reduces electrical coupling between microvascular endothelial cells by dephosphorylating connexin40. **M.L. Bolon and K. Tyml.** Univ. of Western Ontario and Lawson Hlth. Res. Inst. **(759.10)**

12:00 Endothelial gap junction proteins show type-specific differences in oligomerization. **M. Koval, T. Smith, A. Mohankumar, P.J. Minogue, V.M. Berthoud and E.C. Beyer.** Emory Univ. and Univ. of Chicago. **(759.8)**

12:15 Na^+/K^+-pump modulates intercellular communication via interaction with other membrane transporters in vascular smooth muscle cells. **V.V. Matchkov, A.K. Hansen, H. Nilsson and C. Aalkjaer.** Univ. of Aarhus, Denmark. **(759.11)**

307. HYPERTENSION: INTEGRATED MECHANISMS AND SEQUELAE

Featured Topic

(*Sponsored by:* APS Water and Electrolyte Homeostasis Section and Council for High Blood Pressure Research, AHA)

MON. 10:30 AM—CONVENTION CENTER, ROOM 145B

CHAIRED: *G. NAVAR AND J. GRANGER*

10:30 ACE-2 and ANG 1-7: an emerging role in blood pressure regulation and hypertension. **T. Reudelhuber.** Clin. Res. Inst. of Montreal.

11:00 Nitric oxide mediates collecting duct endothelin-1 effects on blood pressure. **D.E. Kohan, Y. Ge, M.P. Schneider, D.M. Pollock and J.S. Pollock.** Univ. of Utah Hlth. Sci. Ctr. and Med. Col. of Georgia. **(754.5)**

11:15 Renal medullary infusion of CoPP prevents angiotensin-II-dependent hypertension in mice. **T. Vera and D.E. Stec.** Univ. of Mississippi Med. Ctr. **(754.10)**

11:30 Interleukin-6-deficiency protects against both acute and chronic angiotensin II-induced endothelial dysfunction. **S.P. Didion, L.I. Schrader, D.A. Kinzenbaw and F.M. Faraci.** Univ. of Iowa. **(618.3)**

11:45 Immune suppression blocks sodium sensitive hypertension following recovery from ischemic acute renal failure. **K.R. Spurgeon-Pechman, D.L. Mattson and D.P. Basile.** Med. Col. of Wisconsin and Indiana Univ., Indianapolis. **(618.10)**

12:00 Uric acid: a novel risk factor for hypertension and renal injury. **R. Johnson.** Unv. of Florida.

308. MITOCHONDRIAL MECHANISMS IN CEREBROVASCULAR FUNCTION IN HEALTH AND DISEASE

Featured Topic

(*Sponsored by:* APS Cardiovascular Section)

MON. 10:30 AM—CONVENTION CENTER, ROOM 154B

CHAIRED: *D.W. BUSIJA*

Oxidative Stress/Hypoxia

10:30 Preconditioning the neurovascular unit via targeting mitochondria. **D.W. Busija.** Wake Forest Univ. Hlth. Sci.

11:00 Mitochondrial regulation of calcium signaling and diameter in cerebral arteries. **J.H. Jaggar.** Univ. of Tennessee.

11:30 Mitochondrial mechanisms underlying beneficial effects of estrogen on cerebrovascular endothelium. **S.P. Duckles.** Univ. of California- Irvine.

12:00 Protective role of manganese superoxide dismutase against angiotensin II-induced, nox2-dependent cerebral endothelial dysfunction. **S. Chrissobolis, S.P. Didion and F.M. Faraci.** Univ. of Iowa. **(908.41)**

12:15 Abnormal diazoxide induced vasodilation in cerebral arteries from Zucker obese rats with insulin resistance. **P.V.G. Katakam, J.A. Snipes, A. Busija and D.W. Busija.** Wake Forest Univ. Hlth. Sci. **(908.40)**

309. O2 SENSING BY CENTRAL NERVOUS SYSTEM

Featured Topic

(*Sponsored by:* APS Hypoxia Group)

MON. 3:15 PM—CONVENTION CENTER, ROOM 145B

CHAIRED: *I. SOLOMON AND J. NEUBAUER*

Oxidative Stress/Hypoxia

3:15 Sodium cyanide and hypoxic hypoxia similarly excite preBötzinger complex neurons in neonatal rat transverse medullary slice. **C.G. Wilson, G.O. Shafer and I.C. Solomon.** Case Western Reserver Univ. and SUNY, Stony Brook. **(762.1)**

3:30 Co-localization of heme oxygenase-2 and neuronal nitric oxide synthase (nNOS) in the pre-Bötzinger complex (pBötC): does nNOS regulate the oxygen sensitivity of the pBötC? **H.H. Danish, R. Shivashankar, J. Sunderram and J.A. Neubauer.** Robert Wood Johnson Med. Sch. **(761.4)**

3:45 Acute hypoxia increases neuronal lactate and superoxide production and decreases intracellular pH in neurons of the nucleus tractus solitarius. **T. Downing, R.W. Putnam, D.P. D'Agostino and J.B. Dean.** Wright State Univ. and Univ. of South Florida Col. of Med. **(762.7)**

4:00 Morphological remodeling of nucleus ambiguus projections to cardiac ganglia in F344 rats following chronic intermittent hypoxia. **J. Ai, B. Yang and Z. Cheng.** Univ. of Central Florida and Harbin Med. Univ., People's Republic of China. **(733.10)**

4:15 Neuroglobin is upregulated by hypoxia and anoxia in the brain of the anoxia-tolerant turtle *Trachemys scripta*. **G.H. Nayak, S.L. Milton and H.M. Prentice.** Florida Atlantic Univ. **(762.15)**

4:30 Bradycardic responses to microinjection of L-glutamate, AMPA, and NMDA into the nucleus ambiguus are attenuated following chronic intermittent hypoxia in young adult F344 rats. **B. Yan, L. Li, D. Gozal, W.B. Wead and Z. Cheng.** Univ. of Central Florida and Univ. of Louisville. **(733.5)**

4:45 Chronic intermittent hypoxia alters respiratory behavior in the pre-Bötzinger complex. **A.J. Garcia, A. Doi, A. Hill, J-C. Viemari, N. Prabhakar and J-M. Ramirez.** Univ. of Chicago and Case Western Reserve Univ. **(610.1)**

310. RECEPTOR BIOLOGY AND INTRACELLULAR SIGNALING

Featured Topic

(*Sponsored by:* APS Cell and Molecular Physiology Section)

MON. 3:15 PM—CONVENTION CENTER, ROOM 155

CHAIRED: *N. FLAVAHAN*

3:15 TNF-α induces diaphragm dysfunction and oxidative stress through TNF receptor 1. **B.J. Hardin, J. Smith and M.B. Reid.** Univ. of Kentucky. **(896.19)**

3:30 Rap1 and filamin-2 regulate subtype-specific, cell-surface delivery of α_2-adrenoceptors. **M.A. Chotani, S. Mitra, A.H. Eid and N.A. Flavahan.** Ohio State Univ. and Johns Hopkins Univ. **(896.9)**

3:45 Estrogen-induced inhibitory effect on urothelial cell proliferation is mediated by GPR30. **J. Teng, Z-y. Wang and D.E. Bjorling.** Univ. of Wisconsin-Madison Sch. of Vet. Med. and Sch. of Med. and Publ. Hlth. . **(896.17)**

4:00 Tyrosine 972 is critical for Jak2 tyrosine kinase function. **I. McDoom, J. Sayyah and P.P. Sayeski.** Univ. of Florida. **(896.18)**

4:15 Regulation of alpha2A-AR trafficking by clonidine and guanfacine in native neurons. **Y. Zhang, R. Lu, L.E. Limbird and Q. Wang.** Univ. of Alabama at Birmingham and Meharry Med. Col. **(896.7)**

4:30 Modulation of the IP3 receptor by IRBIT. **B. Devogelaere and H. De Smedt.** KULeuven, Belgium. **(896.13)**

4:45 Alpha-1A adrenergic receptor overexpression protects hippocampal interneurons. **C.A. Knudson, P.A. Carr, D.M. Perez and V.A. Doze.** Univ. of North Dakota and Cleveland Clin. Fndn. **(896.6)**

5:00 Expression changes of P2Y2 and P2Y6 nucleotide receptors during C6 glioma cell differentiation. **J.O. Garcia, Y. Anglero, A. Cruz, E.E. Aquino, F.A. Gonzalez and W.I. Silva.** Univ. of Puerto Rico, Med. Sci. Campus, Humacao Col. and Rio Piedras Campus. **(896.16)**

311. RENAL ION TRANSPORT

Featured Topic

(*Sponsored by:* APS Renal Section)

MON. 3:15 PM—CONVENTION CENTER, ROOM 146B

CHAIRED: *D. KOHAN AND H-P. MA*

3:15 Cyclosporine stimulates the renal epithelial sodium channel. **Y-Y. Liang, J. Wang and H-P. Ma.** Univ. of Alabama at Birmingham. **(937.16)**

3:30 Decreased fluid reabsorption in the S2 segment of the proximal tubule of SHR is due to reduced activity of NHE3. **C. Panico and W.J. Welch.** Georgetown Univ. **(937.9)**

3:45 Angiotensin II activates H^+-ATPase in type A intercalated cells in mouse cortical collecting duct. **V. Pech, W. Zheng, T.D. Pham, J.W. Verlander and S.M. Wall.** Emory Univ. and Univ. of Florida. **(937.11)**

4:00 cGMP inhibits surface NKCC2 levels in thick ascending limbs by decreasing cAMP. **G.R. Ares and P.A. Ortiz.** Henry Ford Hosp., Detroit. **(937.14)**

4:15 Molecular regulation of endothelin-1 synthesis by renal collecting duct. **D.E. Kohan, P.K. Stricklett, J.L. Kohan, M. Miller and K.A. Strait.** Univ. of Utah Hlth. Sci. Ctr. **(937.5)**

4:30 Role of superoxide anions in mediating the effect of K-restriction on ROMK channels and renal K excretion. **W-H. Wang, E. Babilonia and D-H. Lin.** New York Med. Col. **(937.19)**

4:45 WNKk4 kinase is a negative regulator of K^+-Cl^- cotransporters. **T. Garzón-Muvdi, J. Ponce-Coria, D. Pacheco-Alvarez, K.B. Gagnon, N. Vazquez, E. Moreno, E. Delpire and G. Gamba.** INNSZ-UNAM, Tlalpan, Mexico and Vanderbilt Univ. Med. Ctr. **(937.25)**

5:00 Differential regulation of endocytic trafficking in Kir2.x channels. **A.K. Mason and P.A. Welling.** Univ. of Maryland Baltimore. **(937.22)**

312. ROLES OF INTESTINAL EPITHELIA AND BACTERIA IN INFLAMMATORY DISEASE

Featured Topic

(*Sponsored by:* APS Gastrointestinal and Liver Physiology Section)

MON. 3:15 PM—CONVENTION CENTER, ROOM 154B

CHAIRED: *J.R. TURNER*

Translational Physiology

3:15 The contribution of inter-epithelial and epithelial-bacterial interactions in intestinal inflammation. **M.T. Abreu.** Mount Sinai Sch. of Med.

3:35 Are probiotics effective treatments for inflammatory bowel disease? **K. Madsen.** Univ. of Alberta.

4:00 Identification of the *Salmonella typhimurium* SipA functional domain required for intestinal inflammation. **D.M. Wall and B.A. McCormick.** Massachusetts Gen. Hosp., Charlestown and Harvard Med. Sch. **(617.15)**

4:15 Invasive *E. coli* from patients with inflammatory bowel disease regulate epithelial barrier function. **J-M.A. Klapproth, M. Sasaki, S.V. Sitaraman, J.A. Alpern, A. Akyildiz, A.L. Theiss and A. Nusrat.** Emory Univ. **(617.5)**

4:30 Endogenous IL-10 prevents LPS-induced IFNγ production in the human colonic mucosa. **A. Jarry, C. Bossard, D. Masson, M.G. Denis and C.L. Laboisse.** INSERM U539, Fac. of Med., Nantes. **(617.25)**

4:45 Probiotics prevent oxidative stress-induced disruption of intestinal epithelial barrier function by EGF receptor, PKC and MAP kinase-dependent mechanism. **R.K. Rao, F. Yan, D.B. Polk and A. Seth.** Univeristy of Tennessee, Memphis and Vanderbilt Univ. . **(617.4)**

5:00 Real time analysis of TNF-induced occludin internalization within jejunal epithelia of living mice. **A.M. Marchiando, L. Shen, Y. Guan, A.J.M. Watson, M.H. Montrose and J.R. Turner.** Univ. of Chicago, Univ. of Cincinnati and Univ. of Liverpool. **(617.6)**

Physiology InFocus
Novel Technologies in Physiology and Medicine

313. EXPERIMENTAL EVOLUTION AS A TOOL OF PHYSIOLOGICAL ANALYSIS

Symposium

MON. 8:00 AM—CONVENTION CENTER, BALLROOM B

CHAIRED: *M.R. ROSE*

8:00 Using experimental evolution to study temperature adaptation. **A.F. Bennett.** Univ. of California-Irvine.

8:30 Experimental evolution of physiology in *Drosophila*: from aging to stress resistance. **M.R. Rose and T. J. Bradley.** Univ. of California-Irvine.

9:00 Evolution and the origin of complex diseases. **S. Britton.** Univ. of Michigan.

9:30 Born to run: experimental evolution of voluntary activity levels in mice. **T. Garland.** Univ. of California-Riverside.

TUESDAY, MAY 1

Anatomy

314. VASCULAR DEVELOPMENT, GROWTH AND ADAPTATIONS MINI-MEETING: VESSEL CELL BIOLOGY AND DEVELOPMENT

Symposium

(*Sponsored by:* AAA and NAVBO)

TUE. 8:00 AM—CONVENTION CENTER, ROOM 103A

CHAIRED: *V. BAUTCH*

8:00 Introduction.
8:05 **314.1** Understanding dynamic events in vasculogenesis and remodeling in mammalian embryos using live cell imaging. **M.E. Dickinson.** Baylor Col. of Med.
8:30 **314.2** Endothelial guidance in vascular patterning. **H. Gerhardt, L-K. Phng, M. Hellstrom and C. Betsholtz.** Cancer Res. UK, London, angioGenetics Sweden AB, Stockholm and Karolinska Inst.
8:55 **314.3** Signaling pathways that regulate vascular lumen formation. **M.L. Iruela-Arispe.** UCLA.
9:20 **314.4** Assembly of endothelial tubes. **B.M. Weinstein.** NICHD, NIH.
9:45 Discussion.

315. SKELETAL DEVELOPMENT AND REPAIR

Platform

TUE. 8:00 AM—CONVENTION CENTER, ROOM 156

CHAIRED: *L. OPPERMAN*

8:00 **315.1** In situ transduction by virus localization on bioengineering scaffolds for bone regeneration. **W-W. Hu, Z. Wang, S.J. Hollister and P.H. Krebsbach.** Univ. of Michigan and Univ. of Michigan Sch. of Dent.
8:15 **315.2** COMP blocks death in human chondrocytes by elevating the IAP family of antiapoptotic proteins. **V. Gagarina, A. Carlberg, L. Pereira-Mouries and D.J. Hall.** NIAMS, NIH.
8:30 **315.3** Combination materials for healing bone defects. **M.E. Elsalanty, D. Genecov, K. Salyer, R. Barcelo and L. Opperman.** Baylor Col. of Dent. and Intl. Craniofacial Inst., Dallas.2
8:45 **315.4** Masticatory micromovement in mandibular distraction osteogenesis and its effect on bone growth. **Z. Sun, K. Rafferty, M. Egbert and S. Herring.** Univ. of Washington and Children's Hosp., Seattle.
9:00 **315.5** Functional enhancement of bioreactor-assisted engineered skeletal muscle. **S. Zare, G. Christ, D.G. Moon, W. Zhao, A. Atala and J.J. Yoo.** Wake Forest Univ. Baptist Med. Ctr.
9:15 **315.6** Effects of connective tissue growth factor and osteoactivin on bone healing in a segmental defect model in rats. **I. Arango-Hisijara, J.J. McCarthy, F.F. Safadi and S.N. Popoff.** Temple Univ. Sch. of Med. and Shriners Hosps. for Children.
9:30 **315.7** A mechanical model for in vitro cartilage engineering. **J.R. Amos, J. Potts and J. Bender.** Univ. of South Carolina.
9:45 **315.8** Accelerated ossification of the cochlear aqueduct, TB-meningitis, and hearing loss: are they related? **A.L. Balboni, J.S. Reidenberg, A.D. Bergemann and J.T. Laitman.** Mount Sinai Sch. of Med.

316. REFRESHER COURSE: THE ANATOMY OF AGING

Symposium

TUE. 8:00 AM—CONVENTION CENTER, ROOM 103B

CHAIRED: *W. LAMBERT*

COCHAIRED: *N. GRANGER*

8:00 Introduction.
8:05 **316.1** Osteophytes for neophytes: what every medical student should know about the anatomy of the musculoskeletal system and advancing age. **A.F. Dalley.** Vanderbilt Univ. Sch. of Med.
8:30 **316.2** Aging and the gastrointestinal tract: food for thought. **B.M. Evers.** Univ. of Texas Med. Branch.
8:55 **316.3** Life and death of neurons in the aging cerebral cortex. **J.H. Morrison.** Mount Sinai Sch. of Med.
9:20 **316.4** Changes in urogenital anatomy of postmenopausal women. **S.B. Tate.** Univ. of Louisville.
9:45 Discussion.

317. INDUCTION AND PATTERNING OF THE EARLY KIDNEY

Symposium

TUE. 8:00 AM—CONVENTION CENTER, ROOM 158

CHAIRED: *T. MAUCH*

COCHAIRED: *P. VIZE*

8:00 Introduction.
9:20 **317.1** Microarray analysis of embryonic kidney patterning signals. **P.D. Vize.** Univ. of Calgary, Canada.
8:05 **317.2** The role of Wnt9b in epithelial tubule induction and differentiation. **T.J. Carroll.** Univ. of Texas Southwestern Med. Ctr.
8:30 **317.3** Using high throughput or COPAS™ to study collecting duct development. **R.L. Miller.** Univ. of Utah.
8:55 **317.4** Mouse models of glomerulogenesis and glomerular disease. **S.E. Quaggin.** Mount Sinai Hosp, Toronto.
9:45 Discussion.

318. VASCULAR DEVELOPMENT, GROWTH AND ADAPTATIONS MINI-MEETING: VASCULOGENESIS, ANGIOGENESIS AND ARTERIOGENESIS

Platform (mini-related)

TUE. 10:30 AM—CONVENTION CENTER, ROOM 103A

CHAIRED: *R. TORRY*

10:30 **318.1** Genetic regulation of collateral formation, capacity for remodeling, and VEGF. **J.E. Faber.** Univ. of North Carolina at Chapel Hill.

10:45 **318.2** Arteriogenesis in mouse hindlimb following ischemia and growth factor therapy. **J.P. Singh.** Eli Lilly and Co.

11:00 **318.3** Hyperlipidemia-induced dysregulation of placenta growth factor expression. **P.G. Lloyd, M. Alloosh and M. Sturek.** Oklahoma State Univ. and Indiana Univ., Indianapolis.

11:15 **318.4** Role of TNFα in the reduced capacity of diabetic bone marrow cells to stimulate vascular growth. **O. Awad, H. Hansen, E. Nau and G.C. Schatteman.** Univ. of Iowa.

11:30 **318.5** Cardiac myocyte-derived VEGF-A regulates coronary endothelial proliferation, but not morphogenesis. **R.L. Goodwin, T. Nesbitt, M.J. Yost and J.D. Potts.** USC Sch. of Med.

11:45 **318.6** VEGFR2 regulates p38 but not ERK1/2 in response to shear stress. **E.A. Gee, M. Milkiewicz and T.L. Haas.** York Univ., Canada and Pomeranian Med. Univ., Poland.

12:00 **318.7** Differential effects of cyclic stretch and static stretch on angiogenic responses of microvascular endothelial cells. **W. Zheng, L.P. Christensen and R.J. Tomanek.** Univ. of Iowa.

12:15 **318.8** Hypoxia-induced angiogenesis is suppressed in COX-2 deficient mouse brain cortex. **X. Sun, M.P. Modesitt, C.P. Tsipis and J.C. LaManna.** Case Western Reserve Univ.

319. TEACHING INNOVATIONS II

Platform

TUE. 10:30 AM—CONVENTION CENTER, ROOM 103B

CHAIRED: *A. PAYER*

10:30 **319.1** Informatics approach to student assessment. **S.J. Moorman and G.W. Mulheron.** UMDNJ-Robert Wood Johnson Med. Sch.

10:45 **319.2** The use of reading assignments and learning issues as an alternative to anatomy lectures in team-based learning curriculum. **N. Vasan.** UMDNJ-New Jersey Med. Sch.

11:00 **319.3** Preparing tomorrow's medical educators. **B.J. Thompson, A. Cunningham, G.C. Allen, A.F. Dalley, S.R. Wente, R. Chalkley and J.J. Norden.** Vanderbilt Univ.

11:15 **319.4** The Coalition of American Societies for Anatomy: working together to improve opportunities. **K.K.H. Svoboda.** Texas A&M Hlth. Sci. Ctr., Baylor Col. of Dent.

11:30 **319.5** Training the next generation of anatomists: anatomy teaching meets educational research. **J.J. Walker and P.J. Ward.** Purdue Univ. and Indiana Univ. Sch. of Med.-Lafayette and West Virginia Sch. of Osteo. Med.

11:45 **319.6** Talking points: incorporating team learning strategies into the microscopic anatomy curriculum. **Y. Khan, E.J. Jelsing, W.M. Zielinska, W. Pawlina and S.W. Carmichael.** Mayo Clin. Col. of Med.

12:00 **319.7** A new mechanism for objective feedback to large groups after identification-type exams. **M. Pizzimenti.** Univ. of Iowa.

12:15 **319.8** Anatomy and contextual learning. **J.E. Johnson and C. Henkel.** Wake Forest Univ. Sch. of Med.

320. CURRENT APPROACHES FOR TISSUE ENGINEERING

Symposium

TUE. 10:30 AM—CONVENTION CENTER, ROOM 156

CHAIRED: *N. L'HEUREUX*

COCHAIRED: *T. MCALLISTER*

10:30 Introduction.

11:00 **320.1** Total organ replacement using tissue engineering. **M. Van Dyke, F. Oberpenning, J. Meng, S. Soker, J.J. Yoo and A. Atala.** Wake Forest Univ. Sch. of Med.

11:25 **320.2** The extracellular matrix as a scaffold for regenerative medicine. **S.F. Badylak.** McGowan Inst. for Regen. Med., Pittsburgh.

11:50 **320.3** All matrices are smart matrices. **H.P. Greisler.** Loyola Univ. Med. Ctr. and Hines VA Hosp.

12:15 Discussion.

10:35 **320.4** Tissue engineering of a completely biological and autologous human blood vessel for adult arterial revascularization. **N. L'Heureux.** Cytograft Tissue Engineering Inc., Novato, CA.

321. KIDNEY DEVELOPMENT AND DISEASE

Platform

TUE. 10:30 AM—CONVENTION CENTER, ROOM 158

CHAIRED: *C. BATES*

10:30 **321.1** Nephron development in zebrafish. **A. Davidson, R. Selleck, B. Thisse, C. Thisse, H-d. Song, A. Song, Y. Zhou, Z. Chen and R. Wingert.** Massachusetts Gen. Hosp., IGBMC, Strasbourg, Rui-Jin Hosp, Shanghai Second Med. Univ. and Children's Hosp., Boston.

10:45 **321.2** Differential regulation of tip and stalk of the branching ureteric bud. **H. Sakurai, K.T. Bush, S. Kitamura and S.K. Nigam.** UCSD.

11:00 **321.3** Beta1 integrin and collecting system development. **R. Zent, X. Zhang, G. Mernaugh, S. Coffa, R. Fassler and A. Pozzi.** Vanderbilt Univ. Med. Ctr. and Max Planck Inst. of Biochem., Martinsried.

11:15 **321.4** Deficient embryonic expression of SIX2 is associated with decreased glomerular number and chronic renal failure in the adult 3H1 Br/+ mouse. **B. Fogelgren, I.C. Sharp, S. Yang, W. Ma, M. Himenes, C.F. Uyehara and S. Lozanoff.** Univ. of Hawaii Sch. of Med. and Tripler Army Med. Ctr., HI.

11:30 **321.5** Renal pathogenesis in a transgenic model of in utero obstructive nephropathy. **K.M. McHugh, S. Singh, M. Robinson, M.L. Robinson and C.M. Bates.** Columbus Children's Res. Inst. and Miami Univ.

11:45 **321.6** Factors which regulate formation of the intermediate mesoderm. **T.M. Schultheiss, C.N. Kamei and R.G. James.** Beth Israel Deaconess Med. Ctr. and Harvard Med. Sch.
12:00 Discussion.

322. TECHNOLOGICAL AND TEACHING INNOVATIONS IN ANATOMICAL SCIENCES

Platform

TUE. 2:30 PM—CONVENTION CENTER, ROOM 103B

CHAIRED: *T. BACRO*

2:30 **322.1** New imaging visualizations of the posterior cranial base in rats via micro-CT: implications for uncovering anatomical correlates of age-related hearing loss. **A.Y. Yemin, H.M. Salinas, A.L. Balboni, J.C. Fritton, J.S. Reidenberg, A.D. Bergemann, M.B. Schaffler, E.E. Smouha and J.T. Laitman.** Mount Sinai Sch. of Med.
2:45 **322.2** Evaluation of the academic value of student teaching students in laboratory. **B. Vidic, V. Lee and A. Hewetson.** Texas Tech Univ. Hlth. Sci. Ctr.
3:00 **322.3** Incorporating computer-assisted instruction into a Ghana, West Africa, medical school curriculum. **D.A. Morton, C.S. Abaidoo, S.S. Stensaas and K.B. Foreman.** Univ. of Utah and Kwame Nkrumah Univ. of Sci. and Technol., Ghana.
3:15 **322.4** Promoting self-directed learning through visual aids for anatomical images. **V.H. Lee, A.A. Hewetson and B. Vidic.** Texas Tech Univ. Hlth. Sci. Ctr.
3:30 **322.5** Redesigned gross anatomy course in an osteopathic medical school. **T.P. Ma and W.A. Roy.** Touro Univ. Nevada.
3:45 **322.6** Stretching and reaching out: bridging the gap between the medical and fitness communities. **C. Sager, M. McCulloch and J.T. Laitman.** Mount Sinai Sch. of Med.
4:00 **322.7** Dyad pedagogy in diagnostic medical imaging. **L.R. Sherman and S. Márquez.** Mount Sinai Sch. of Med. and Downstate Med. Sch.
4:15 **322.8** An online clinically focused problem-based learning paradigm for anatomical instruction in secondary school education. **M. D'Angelo, H.A. Polis, O. Akinbinu, B.W. Beluch and C. DiLullo.** Philadelphia Col. of Osteo. Med. and Friends-Select High Sch.

323. THE INS AND OUTS OF CIRCADIAN ORGANIZATION

Symposium

TUE. 2:30 PM—CONVENTION CENTER, ROOM 156

CHAIRED: *L. KRIEGSFELD*

2:30 Introduction.
2:40 **323.1** How do rods and cones signal light information for nonimage-forming visual functions? **S. Hattar.** Johns Hopkins Univ.
3:05 **323.2** From clock to clock shops: intra- and intercellular mechanisms regulating daily timekeeping. **E.D. Herzog.** Washington Univ.
3:30 **323.3** Building a mammalian brain clock. **R. Silver.** Barnard Col., Columbia Univ.
3:55 **323.4** Regulation of neuroendocrine and ovulatory function: it's all in the timing. **L.J. Kriegsfeld.** Univ. of California-Berkeley.
4:20 Discussion.

324. STEM CELLS AND REGENERATIVE MEDICINE

Platform

TUE. 2:30 PM—CONVENTION CENTER, ROOM 158

CHAIRED: *D. STOCUM*

2:30 **324.1** Human mesenchymal stem cells support capillary-like structures in a 3D model of in vitro angiogenesis. **S.R.R. Hall, Z. Chen, C. Ward and L. Melo.** Queen's Univ., Canada.
2:45 **324.2** Biomaterials-directed in vivo commitment of mesenchymal cells derived from human embryonic stem cells. **N.S-y. Hwang, S. Varghese, H.J. Lee, Z. Zhang and J. Elisseeff.** Johns Hopkins Univ.
3:00 **324.3** Using $CD34^+$ cells to stimulate vascularization and inhibit encapsulation of implantable bioartificial devices. **M.R. Sukup, L. Rodewald, H. Hansen, V.G.J. Rodgers and G.C. Schatteman.** Univ. of Iowa and Univ. of California-Riverside.
3:15 **324.4** Gene profile of adult neural crest stem cells from hair follicles. **Y.F. Hu and M. Sieber-Blum.** Med. Col. of Wisconsin.
3:30 **324.5** Stem cells derived from the mouse fetal liver can transfer a donor-specific healing phenotype ranging from scar formation to regeneration. **E. Heber-Katz, K. Bedelbaeva, L. Clark, J. Leferovich, X-M. Zhang and Y. Zhang.** The Wistar Inst. and Univ. of Pennsylvania.
3:45 **324.6** Musashi expression in developing and mature chick eye. **T.L. Belecky-Adams, J. Wilson, K. Sato and E.A. Chernoff.** Indiana Univ.-Purdue Univ. Indianapolis.
4:00 **324.7** Stem/progenitor cells in amphibian limb and spinal cord regeneration. **E.A.G. Chernoff and K. Sato.** Indiana Univ.-Purdue Univ. Indianapolis.
4:15 **324.8** Loss and gain of regeneration function in *Xenopus laevis* hind limbs. **H.L.D. Nye, A. Huff and J.A. Cameron.** Univ. of Illinois at Urbana-Champaign.

325. H.W. MOSSMAN LECTURE: DEVELOPMENTAL BIOLOGY

Awad Lecture

TUE. 5:00 PM—CONVENTION CENTER, ROOM 158

Developmental Biology

5:00 **325.1** Exploring neural circuit organization and assembly using genetic mosaics. **L. Luo.** Stanford Univ.

LAST DAY TO VISIT EXHIBITS
Tuesday, May 1
9:00 AM – 3:30 PM

Biochemistry and Molecular Biology

326. LIPIDS AS TRANSCRIPTIONAL REGULATORS

Symposium

TUE. 3:30 PM—CONVENTION CENTER, ROOM 201

CHAIRED: *S. KLIEWER*

This session appears on page 86 following Session 339.

327. SCHERING-PLOUGH RESEARCH INSTITUTE AWARD

TUE. 8:30 AM—CONVENTION CENTER, BALLROOM C

8:30 Introductory remarks.

8:35 **327.1** Towards an RNA splicing code. **Z. Wang, X. Xiao, B. Friedman, N. Shomron and C.B. Burge.** MIT.

328. CHEMISTRY AND CELL BIOLOGY OF NATURAL PRODUCTS

Symposium

TUE. 9:55 AM—CONVENTION CENTER, ROOM 202A

CHAIRED: *J. TAUNTON*

Chemical Biology Meeting

9:55 Introductory remarks. **J. Taunton.**

10:00 **328.1** PAP7 is a steroidogenesis signal transporter from Golgi apparatus to mitochondria in mouse MA-10 Leydig cells. **J. Liu, M. Rone and V. Papadopoulos.** Georgetown Univ. Med. Ctr.

10:35 Regenerative pathways probed using chemical genetics in zebrafish. **R.L. Tanguay, L.K. Mathew, S. Sengupta and R.T. Peterson.** Oregon State Univ. and Massachusetts Gen. Hosp. **(640.4)**

10:50 **328.2** Molecular mechanism of cotransin, a potent and selective inhibitor of protein secretion. **J. Taunton.** UCSF.

11:25 Mechanistic investigation of HalM2, one of two bifunctional enzymes involved in haloduracin biosynthesis. **A.L. McClerren, L.E. Cooper and W.A. van der Donk.** Univ. of Illinois at Urbana-Champaign. **(639.2)**

11:40 **328.3** Natural product enzymatic assembly lines: novel features. **C.T. Walsh.** Harvard Med. Sch.

No Smoking

In Session Rooms, Poster or Exhibit Area

329. CENTROMERES AND KINETOCHORES

Symposium

TUE. 9:55 AM—CONVENTION CENTER, ROOM 206

CHAIRED: *D. CLEVELAND*

The Chromosome Cycle Meeting

9:55 Introductory remarks. **D. Cleveland.**

10:00 The genomic nature of human centromeres. **H.F. Willard.** Duke Univ. Med. Ctr.

10:30 The CENP-A targeting domain confers conformational rigidity to centromeric nucleosomes and plays an essential role at mitosis. **B.E. Black, L.E.T. Jansen, P.S. Maddox, D.R. Foltz, M.A. Brock, S. Bédard, V. Woods, A.B. Desai, J.V. Shah and D.W. Cleveland.** Univ. of Pennsylvania and UCSD. **(812.3)**

10:45 Centromere structure and function in *Drosophila*. **G.H. Karpen.** Univ. of California-Berkeley.

11:15 Phosphorylation of histone H3 on threonine-3 in the centromere converts TD-60 from an inhibitor to an activator of Aurora B kinase. **T. Stukenberg and S.E. Rosasco.** Univ. of Virginia Med. Sch. **(812.1)**

11:30 Chromosomal passenger protein INCENP exists in constitutive and mitotic isoforms regulated by phosphorylation and proteolysis. **K.H. Scheidtmann, A. Conradi, G. Landsberg and A. Temme.** Univ. of Bonn and Tech Univ. Dresden. **(812.2)**

11:45 **329.1** Guarding the genome: centromeres, the mitotic checkpoint and tumorigenesis. **D. Cleveland.** UCSD.

330. PROTEIN-LIPID INTERFACE

Symposium

TUE. 9:55 AM—CONVENTION CENTER, ROOM 207B

CHAIRED: *C. R. SANDERS*

Macromolecular Structure and Dynamics Meeting

9:55 Introductory remarks. **C.R. Sanders.**

10:00 **330.1** A structure for little orphan diacylglycerol kinase. **C.R. Sanders, F.D. Sonnichsen and H.J. Kim.** Vanderbilt Univ. and Case Western Reserve Univ.

10:30 Break.

10:45 **330.2** Solution NMR structure and dynamics of the integral membrane enzyme DsbB—insights into periplasmic disulfide bond formation. **J.H. Bushweller, Y. Zhou and T. Cierpicki.** Univ. of Virginia Hlth. Sci. Ctr.

11:15 Crystal structures of complexes of phospholipase A_2 with natural and synthetic inhibitors. **R. Prem Kumar, N. Singh, S. Sharma, P. Kaur, A. Srinivasan and T.P. Singh.** All India Inst. of Med. Sci., New Delhi. **(649.6)**

11:30 Modulation of gastric lipolysis by the phospholipid specie: link to specific lipase-phospholipid interaction at the lipid/water interface? **F. Gaëlle, C. Lévêque, J. Peyrot, G. Pieroni, T.C. Coste and M. Armand.** INSERM, INRA, Fac. of Med. and Hosp. Nord, Marseille and Innovation Santé Lipides, Valbonne. **(800.1)**

11:45 **330.3** Transport of proteins across membranes: structure of the colicin I receptor bound to colicin Ia. **S.K. Buchanan, P. Lukacik, S. Grizot, R. Ghirlando, M.M. Ali, T.J. Barnard, K.S. Jakes, P.K. Kienker and L. Esser.** NIDDK, NIH and Albert Einstein Col. of Med.

331. INFECTIOUS DISEASES IN MINORITY POPULATIONS — HEPATITIS C

Symposium

TUE. 9:55 AM—CONVENTION CENTER, ROOM 209C

CHAIRED: *C. CAMERON*

Minority Affairs Committee Sponsored Symposium

9:55 Introductory remarks. **C. Cameron.**
10:00 **331.1** New insights into the molecular and cellular biology of hepatitis C virus. **K.V. Konan.** Penn State.
10:35 **331.2** Clinical aspects of HCV infection: racial disparity in treatment response. **G. Lake-Bakaar.** Weill Med. Col. of Cornell Univ.
11:10 **331.3** HIV and HCV infection among minority drug injectors. **A.L. Estrada.** Univ. of Arizona.
11:45 HCV influences the behaviour of cytoskeletal and adhesion molecules in HepG2 cells. **C. Balsano, A. Spaziani, M. Massimi, A. Alisi, S. Lili and L. Conti De Virgiilis.** Univ. of L'Aquila, A. Cesalpino Fndn., Rome and IRCCS-San Raffaele La Pisana, Rome. **(827.2)**
12:00 Relationship between the cellular traffic from mothers to fetus and HBV intrauterine transmission. **S. Wang and J. Wei.** Shanxi Med. Univ., People's Republic of China. **(827.1)**

332. GOLGI STRUCTURE AND BIOGENESIS

Symposium

TUE. 9:55 AM—CONVENTION CENTER, ROOM 207A

CHAIRED: *M. SHAIR*

Organelle Dynamics Meeting

9:55 Introductory remarks. **M. Shair.**
10:00 Biogenesis and dynamics of the yeast Golgi. **B. Glick.** Univ. of Chicago.
10:35 Golgi architecture in the malaria parasite *Plasmodium falciparum*. **T-W. Gilberger, S. Herrmann, M. Treeck, A. Cowman, M. Marti and N.S. Struck.** Bernhard-Nocht Inst. for Trop. Med., Hamburg and Walter and Eliza Hall Inst. for Med. Res., Melbourne. **(819.1)**
10:50 **332.1** Reversible small molecule induced separation of mammalian Golgi cisternae. **M. Shair, T. Kirchhausen, R. Hannoush and B. Goess.** Harvard Univ. and Harvard Med. Sch.
11:25 Parafusin: isoforms, number of genes and evolutionary origin. **E. Wyroba, L. Liu and B.H. Satir.** Nencki Inst. of Exptl. Biol., Warsaw and Albert Einstein Col. of Med. **(821.2)**
11:40 Golgi secretary transport by rapid partitioning within a continuous two phase membrane system. **J. Lippincott-Schwartz.** NICHD, NIH.

333. SMALL RNAs

Symposium

TUE. 9:55 AM—CONVENTION CENTER, ROOM 209A

CHAIRED: *W. FILIPOWICZ*

RNA Meeting

9:55 Introductory remarks. **W. Filipowicz.**
10:00 **333.1** Mechanisms of small RNA-mediated mammalian gene silencing. **T. Tuschl, P. Landgraf, J. Ludwig, M. Landthaler, C. Sander and M. Zavolan.** Rockefeller Univ., Mem. Sloan-Kettering Cancer Ctr. and Bioctr. of Univ. of Basel.
10:45 **333.2** Mechanisms and reversibility of miRNA-mediated translational repression and P-body localization of human mRNAs. **W. Filipowicz.** Friedrich Miescher Inst., Basel.
11:30 Small non-coding RNAs in regulation of bacterial stress responses. **E. Wagner.** Uppsala Univ., Sweden.

334. MOLECULAR PROFILING OF CELL SYSTEMS

Symposium

TUE. 9:55 AM—CONVENTION CENTER, ROOM 202B

CHAIRED: *T. MEYER*

Systems Biology Meeting

9:55 Introductory remarks. **T. Meyer.**
10:00 Title not available. **P.K. Sorger.** MIT.
10:30 The *Saccharomyces* genome database provides comprehensive information about the biology of *S. cerevisiae* and tools for studies in comparative genomics. **J.E. Hirschman, S. Engel, E. Hong, R. Balakrishnan, K. Christie, M. Costanzo, S. Dwight, D. Fisk, R. Nash, J. Park, M. Skrzypek, K. Dolinski, M. Livstone, R. Oughtred, R. Andrada, G. Binkley, Q. Dong, B. Hitz, S. Miyasoto, M. Schroeder, S. Weng, E. Wong,.** Stanford Univ. Sch. of Med. and Princeton Univ. **(502.4)**
10:45 Using systems biology to find therapies for neglected diseases. **E. Winzeler.** The Scripps Res. Inst.
11:15 **334.1** Unraveling the design principles of endocytosis and signaling using multi-parametric image analysis. **M. Zerial.** Max Planck Inst. of Molec. Cell Biol. and Genet., Dresden.
11:45 **334.2** Fluorescence imaging of cell signaling systems. **T. Meyer.** Stanford Univ.

335. HOWARD K. SCHACHMAN PUBLIC SERVICE AWARD LECTURE

TUE. 12:30 PM—CONVENTION CENTER, ROOM 201

12:30 Introductory remarks.
12:35 **M. Woolley.** Research!America.

336. RESEARCH FUNDING BY THE AMERICAN CANCER SOCIETY

Workshop

(*Sponsored by:* American Cancer Society)

TUE. 12:30 PM—CONVENTION CENTER, ROOM 208A/B

CHAIRED: *C. C. WIDNELL*

12:30 **336.1** Research funding at the American Cancer Society. **C.C. Widnell.** American Cancer Society, Atlanta.

337. MINORITY SCIENTISTS NETWORKING MIXER

Special Session

TUE. 12:30 PM—CONVENTION CENTER, ROOM 203A/B

This lunchtime event brings together PI's, industry professionals and educators with young investigators and students to discuss career opportunities, mentoring options and issues facing minority scientists today.

338. ASBMB MEET THE SPEAKERS SERIES

Special Session

TUE. 1:00 PM—CONVENTION CENTER, ASBMB LOUNGE

Meet the ASBMB Award Lecturers in an informal setting for discussion and networking. Check the ASBMB Lounge for the daily schedule.

339. ASBMB - AMGEN AWARD

TUE. 2:15 PM—CONVENTION CENTER, BALLROOM C

2:15 Introductory remarks.
2:20 **339.1** Causes and consequences of aneuploidy. **A. Amon.** MIT.

326. LIPIDS AS TRANSCRIPTIONAL REGULATORS

Symposium

TUE. 3:30 PM—CONVENTION CENTER, ROOM 201

CHAIRED: *S. KLIEWER*

3:30 Introductory remarks. **S. Kliewer.**
3:35 **326.1** The central role of Insig proteins in regulating cholesterol homeostasis. **J.L. Goldstein.** Univ. of Texas Southwestern Med. Ctr.
4:05 Sterol intermediates from cholesterol biosynthetic pathway as liver X receptor ligands. **C. Yang, J.G. McDonald, J.C. Cohen and H.H. Hobbs.** Univ. of Texas Southwestern Med. Ctr. **(780.3)**
4:20 **326.2** Lipids as ligands for orphan nuclear receptors. **T.M. Willson.** GlaxoSmithKline.
4:50 SREBP positively regulates the parasympathetic response of the heart. **S.P. Georgescu, H-J. Park, C. Du, Y. Zhang, T.F. Osborne, R. Blaustein and J.B. Galper.** Tufts-New England Med. Ctr. and Univ. of California-Irvine. **(780.2)**
5:05 Sterol regulatory element binding protein-1a knockout mice have an impaired response to fasting and refeeding. **L.E. Hammond, M.K. Bennett, M.L. Dragojlovic and S.G. Young.** Univ. of California-Irvine and UCLA. **(779.16)**
5:20 **326.3** Endocrine actions of bile acids via nuclear receptors and FGFs. **T. Inagaki, M. Choi, D. Mangelsdorf and S. Kliewer.** Univ. of Texas Southwestern Med. Ctr. and Howard Hughes Med. Inst.

340. PREPARING FOR A SUCCESSFUL CAREER IN INDUSTRY

Symposium

TUE. 3:30 PM—CONVENTION CENTER, ROOM 209C

CHAIRED: *G. BERTENSHAW AND R. A. COPELAND*

Education and Professional Development Committee Sponsored Symposium

3:30 Introductory remarks. **G. Bertenshaw and R. A. Copeland.**
3:35 **340.1** Biomedical careers in the pharmaceutical industry. **R.A. Copeland.** GlaxoSmithKline.
4:20 **340.2** Career options in industry: consulting / venture capital. **M.A. Navia.** Oxford Bioscience Partners, Boston.
5:05 Title not available. **G. Bertenshaw.** Clearant Inc., Los Angeles.

341. COMPUTATIONAL STUDIES OF MECHANISTIC AND DYNAMICAL ASPECTS OF ENZYME REACTIONS

Symposium

TUE. 3:30 PM—CONVENTION CENTER, ROOM 207B

CHAIRED: *S. HAMMES-SCHIFFER*

Enzymes - Mechanism and Design Meeting

3:30 Introductory remarks. **S. Hammes-Schiffer.**
3:35 **341.1** Hydrogen tunneling and protein motion in enzyme reactions. **S. Hammes-Schiffer.** Penn State.
4:10 Use of density functional theory calculations in the development of a novel mechanism for proton pumping by the B-type cytochrome *c* oxidases: the cytochrome *ba3* from *Thermus thermophilus*. **J.A. Fee, D.A. Case and L. Noodleman.** The Scripps Res. Inst. **(802.1)**
4:25 **341.2** Dynamic contributions to the free energy barrier of an enzymatic reaction. **J. Gao, Y. Fan, S. Ma and D.G. Truhlar.** Univ. of Minnesota, Minneapolis.
5:00 Quantum mechanics analysis of field effects on the main chain atoms of amino acids. **D.S. Dwyer.** LSU Hlth. Sci. Ctr., Shreveport. **(802.6)**
5:15 **341.3** Studying protein prenylation in farnesyltransferase and Orf2 using computational tools. **K.M. Merz, Jr..** Univ. of Florida.

342. EXTRACELLULAR MATRIX AT THE MOLECULAR SCALE

Symposium

TUE. 3:30 PM—CONVENTION CENTER, ROOM 202B

CHAIRED: *V. QUARANTA*

Extracellular Matrix at Multiple Biological Scales Meeting

3:30 Introductory remarks. **V. Quaranta.**

3:35 **342.1** Integrin allostery and bidirectional signal transmission across the plasma membrane. **T.A. Springer.** CBR Inst. for Biomed. Res., Boston.

4:05 GPR56 binds tissue transglutaminase and inhibits melanoma tumor growth and metastasis. **L. Xu, S. Begum, J.D. Hearn and R.O. Hynes.** MIT and Harvard Univ. **(506.1)**

4:20 **342.2** Molecular recognition in the assembly of collagens. **B.G. Hudson, J-P. Cartailler, K. Alvares, A. Veis and J. Khoshnoodi.** Vanderbilt Univ. Med. Ctr., Symmation LLC, Nashville and Northwestern Univ. Feinberg Sch. of Med.

4:50 Fibronectin unfolding revisited: modeling physiological unfolding mechanisms of fibronectin's tenth repeat of type III with steered molecular dynamics simulations. **E. Gee, D. Ingber and C. Stultz.** Harvard Med. Sch., Children's Hosp. Boston and MIT. **(797.5)**

5:05 RNAi knockdown of laminin γ-1 in the cell blocks *Trypanosoma cruzi* infection. **K.J. Simmons, P.N. Nde, M.N. Madison, Y.Y. Kleshchenko, M.F. Lima and F. Villalta.** Meharry Med. Col. **(797.3)**

5:20 **342.3** Binding of integrins to laminins. **V. Quaranta, M. Harris, H. Yamashita and M. Tripathi.** Vanderbilt Univ. Med. Sch.

343. TELOMERES AND TELOMERASE

Symposium

TUE. 3:30 PM—CONVENTION CENTER, ROOM 206

CHAIRED: *K. COLLINS*

From Genome to Epigenome - Modification and Repair Meeting

3:30 Introductory remarks. **K. Collins.**

3:35 **343.1** Responses of human cancer cells to telomerase interference. **E.H. Blackburn, S. Li and L. Xu.** UCSF.

4:05 Estrogen regulation of telomerase in the adrenal gland of mice. **S.L. Bayne, M. Jones, H. Li and J-P. Liu.** Monash Univ. and Med. Ctr., Australia. **(818.4)**

4:20 Telomerase and the consequences of telomere shortening. **C. Greider.** Johns Hopkins Univ. Sch. of Med.

4:50 TRF2 binding to telomere nucleosomal arrays. **A.M. Baker, S.J. Khan and T.M. Fletcher.** Univ. of Miami. **(818.3)**

5:05 Crystal structure and functional analysis of the Rap1 C-terminus: insights into transcriptional silencing and telomere length regulation. **E.A. Feeser and C. Wolberger.** Johns Hopkins Univ. Sch. of Med. and HHMI. **(818.1)**

5:20 **343.2** Assembly and activity of endogenous telomerase holoenzymes. **K. Collins.** Univ. of California-Berkeley.

344. AGING AND METABOLISM

Symposium

TUE. 3:30 PM—CONVENTION CENTER, ROOM 207A

CHAIRED: *P. PUIGSERVER*

Metabolism Meeting

3:30 Introductory remarks. **P. Puigserver.**

3:35 **344.1** The genetics of aging and age-related diseases: from worm to mouse. **A. Dillin.** Salk Inst. for Biol. Studies.

4:05 The metabolomics of aging. **A. Berger, E. Milgram, M. Mitchell, K. Lawton, R.W. Hanson, S. Kalhan and M. Milburn.** Metabolon Inc., Durham, NC, Case Western Reserve Univ. and Cleveland Clin. Fndn. **(823.4)**

4:20 **344.2** Calorie reduction and life span extension: a genetic pathway in the fly. **S.L. Helfand.** Brown Univ.

4:50 **344.3** Control of nutrient and energy homeostasis through the PGC-1 pathway. **P. Puigserver.** Dana-Farber Cancer Inst.

5:20 **344.4** Metabolic shifts induced by caloric restriction. **R. Weindruch and R.M. Anderson.** Univ. of Wisconsin-Madison, VA Hosp. and Wisconsin Natl. Primate Res. Ctr.

345. CO- AND POST-TRANSLATIONAL PROTEIN FOLDING

Symposium

TUE. 3:30 PM—CONVENTION CENTER, ROOM 209A

CHAIRED: *J. S. WEISSMAN*

Protein Synthesis, Folding and Turnover Meeting

3:30 Introductory remarks. **J.S. Weissman.**

3:35 **345.1** Chaperone-assisted protein folding in the cytosol. **F.U. Hartl.** Max Planck Inst. of Biochem., Martinsried.

4:05 The role of the DnaK system in regulating the ClpB AAA+ ATPase chaperone activity. **S.M. Doyle, J.R. Hoskins and S. Wickner.** NCI, NIH. **(808.2)**

4:20 **345.2** Network of Hsp70:J-protein molecular chaperone machineries. **E.A. Craig, A. Meyer and C. Sahi.** Univ. of Wisconsin-Madison.

4:50 Protein remodeling by ClpB AAA+ ATPase independent of the DnaK/Hsp70 chaperone system. **J.R. Hoskins, S.M. Doyle, J.J. Miller and S. Wickner.** NCI, NIH. **(808.11)**

5:05 Biochemical and structural studies of the oligosaccharyl transferase complex. **M.M. Chavan, Z. Chen, H. Li, H. Li and W. Lennarz.** Stony Brook Univ. and Brookhaven Natl. Lab. **(807.11)**

5:20 **345.3** A luminal surveillance complex that selects misfolded glycoproteins for ER associated degradation. **J. Weissman.** UCSF and HHMI.

NO SMOKING IN SESSION ROOMS, POSTER OR EXHIBIT AREA

346. DNA DAMAGE SIGNALING

Symposium

TUE. 3:30 PM—CONVENTION CENTER, ROOM 202A

CHAIRED: *M.B. YAFFE*

Signaling Pathways Controlling Cell Structure and Fate Meeting

3:30 Introductory remarks. **M.B. Yaffe.**
3:35 **346.1** Two different ubiquitin ligases control the abundance of claspin at different phases of the cell cycle. **M. Pagano, F. Bassermann and A. Peschiaroli.** NYU Sch. of Med.
4:05 PP2Cγ-mediated S-phase accumulation induced by the proteasome-dependent degradation of $p21^{WAF1/CIP1}$. **E-J. Suh, Y.J. Kim and S.H. Kim.** KyungHee Univ., Republic of Korea. **(518.8)**
4:20 **346.2** Checkpoint signaling and protein degradation. **W. Harper, J. Jin, F. Stegmeier, M. Sowa, B. O'Connell, L. Ang, J. Chen, G. Nalepa and S.J. Elledge.** Harvard Med. Sch.
4:50 Ubiquitination and degradation of homeodomain-interacting protein kinase 2 by WSB-1. **C.Y. Choi and D. Lee.** Sungkyunkwan Univ., Republic of Korea. **(784.4)**
5:05 Akt signaling is differentially terminated by the phosphatase PHLPP and a new isoform, PHLPP2. **J. Brognard, E. Sierecki, T. Gao and A.C. Newton.** UCSDand Univ. of Texas Med. Branch. **(635.5)**
5:20 A systems biology approach to protein kinase signaling after DNA damage. **M.B. Yaffe.** MIT.

347. SCIENTIFIC THEMATIC RECEPTIONS

Special Session

TUE. 5:50 PM—CONVENTION CENTER, 2ND FLOOR FOYER

The ASBMB Annual Meeting has been divided into 13 scientific themes. At the conclusion of the afternoon scientific symposia on Monday and Tuesday, each scientific theme will host a reception. Attendees will have the opportunity to interact in an informal setting with invited speakers and colleagues. Tuesday's thematic receptions include: 1) From Genome to Epigenome, 2) Protein Synthesis, 3) Enzymes, 4) Extracellular Matrix, 5) Metabolism, 6) Lipids, and 7) Signaling Pathways

348. WOMEN SCIENTISTS MENTORING/ NETWORKING RECEPTION

Special Session

TUE. 6:30 PM—CONVENTION CENTER, ROOM 203A/B

CHAIRED: *A. WOLFSON*

Each year, the ASBMB sponsors a session where women scientists reflect on some aspect of their careers or general issues surrounding women's participation in science. Following short talks, there is an opportunity for informal discussion and networking. Last year's session, on the occasion of the Society's 100th anniversary, showcased the women who have been presidents of the ASBMB. This year we focus on the future, with presentations by a panel of women at early stages of their careers and a discussion of how issues for women scientists in the 21st century may differ (or not) from those of the past.

Nutrition

349. ASSESSMENT OF VITAMIN D EXPOSURE IN POPULATION-BASED STUDIES

Symposium

(Supported by an educational grants from National Dairy Council, and Kraft Foods)

TUE. 8:00 AM—CONVENTION CENTER, BALLROOM A

CHAIRED: *A.E. MILLEN*

COCHAIRED: *L.M. BODNAR*

8:00 Chair's introduction.
8:05 Brief overview: vitamin D exposure and health outcomes. **M. Holick.** Boston Univ. Sch. of Med.
8:25 Q&A.
8:30 Blood biomarkers of vitamin D status. **J.E. Zerwekh.** Univ. of Texas Southwestern Med. Ctr.
8:55 Q&A.
9:00 Development of a U.S. Department of Agriculture vitamin D nutrient database. **J. Holden.** USDA, Beltsville.
9:20 Q&A.
9:25 Sunlight assessment questionnaires: can we accurately assess vitamin D exposure from sunlight? **C. McCarty.** Marshfield Clin. Res. Fndn., WI.
9:45 Q&A.
9:50 Discussion panel. Michael Holick, Joseph Zerwekh, Joanne Holden, Catherine McCarty.

350. CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION IN OLDER ADULTS

Minisymposium

TUE. 8:00 AM—CONVENTION CENTER, ROOM 151A

CHAIRED: *C. LENGYEL*

COCHAIRED: *J. SHARKEY*

8:00 **350.1** Ethnic comparison of risk differences across body mass index levels for incident hypertension and diabetes: the PRC and ARIC studies. **K.P. Truesdale, J. Stevens, E. Katz and J. Cai.** Univ. of North Carolina at Chapel Hill.
8:15 **350.2** The effects of aging on the gene expression of adrenomedullin and its receptor protein components in the rat: possible implication in insulin resistance in skeletal muscle and adipose tissue. **H. Chow and F. Tang.** Univ. of Hong Kong.

8:30 **350.3** Weight cycling and changes in body composition in community-dwelling older adults. **J.S. Lee, M. Visser, F. Tylasvky, S.B. Kritchevsky, A. Schwartz, N. Sahyoun, T. Harris and A.B. Newman.** Univ. of Georgia, Free Univ., Amsterdam, Univ. of Tennessee, Memphis, Wake Forest Univ., UCSF, Univ. of Maryland College Park, NIA, NIH and Univ. of Pittsburgh.

8:45 **350.4** The ratio of holotranscobalamin to total B12 is associated with cognitive impairment in elderly Latinos with elevated depression scores. **M.G. Garrod, R. Green, L.H. Allen, D.M. Mungas, W.J. Jagust, M.N. Haan and J.W. Miller.** Univ. of California-Davis Med. Ctr., USDA, Davis, Univ. of California-Berkeley and Univ. of Michigan.

9:00 **350.5** Quality of self-selected diets of nonobese participants in a randomized controlled trial of caloric restriction: the CALERIE study. **C.W. Bales, M. McCrory, J. Zheng, C. Champagne, C. Gilhooly, J. Hannah, S. Racette, C. Martin, K. Obert, S. Das, J. Delany, S. Mandel, J. Rochon, S. Roberts and K. Schechtman.** Duke Univ Med. Ctr., Tufts Univ., Washington Univ., Pennington Biomed. Res. Ctr., Baton Rouge and NIA, NIH .

9:15 **350.6** The relationship between food group consumption, self-rated health, and life satisfaction of elderly community-dwelling Canadian males.: the Manitoba Follow-up Study. **C.O. Lengyel, A.K. Obirek and R.B. Tate.** Univ. of Manitoba.

9:30 **350.7** Community food resources and chronic disease: objective measures and the perceptions of older adults in rural areas. **J.R. Sharkey, S.A. Horel, L. Zhu and J.N. Burdine.** Sch. of Rural Publ. Hlth., College Station, TX.

9:45 **350.8** Live Healthy Georgia—Seniors Taking Charge outcome evaluation 2005-2006. **M.A. Johnson, S. Reddy, J.G. Fischer, T. Sellers, H. Stephens, E.M. Speer and S. Park.** Univ. of Georgia and Georgia Div. of Aging Svcs., Atlanta.

351. DIETARY FACTORS AFFECTING LIPID METABOLISM II

Minisymposium

TUE. 8:00 AM—CONVENTION CENTER, ROOM 151B

CHAIRED: *M.L. FERNANDEZ*

COCHAIRED: *R.J. WOOD*

8:00 **351.1** Plant sterols consumed in low-fat yogurt as a snack lower cholesterol. **I. Rudkowska, S.S. AbuMweis, C. Nicolle and P.J.H. Jones.** Univ. of Manitoba, McGill Univ. Sch. of Dietetics and Human Nutr. and Danone Res., Palaiseau, France.

8:15 **351.2** A combination nutritional therapy of psyllium and plant sterols reduced plasma LDL-C concentrations in hypercholesterolemic subjects by decreasing cholesteryl ester protein activity and upregulating the LDL receptor. **S. Shrestha, H.C. Freake, M.M. McGrane and M.L. Fernandez.** Univ. of Connecticut.

8:30 **351.3** Evaluation of plant sterol and cholesterol absorption in overweight, hypercholesterolemic men with high and low baseline circulating plant sterol concentrations. **H.L. Zhao, A. Houweling, C. Vanstone, S. Jew, E. Trautwein, G. Duchateau and P.J.H. Jones.** Univ. of Manitoba, McGill Univ., Ste. Anne de Bellevue and Unilever R&D, Vlaardingen, The Netherlands.

8:45 **351.4** Eggs increase plasma LDL cholesterol and lutein concentrations in overweight/obese men following a carbohydrate-restricted diet. **G. Mutungi, J.C. Ratliff, D. Waters, M. Torres-Gonzalez, R.M. Clark, J.S. Volek and M.L. Fernandez.** Univ. of Connecticut.

9:00 **351.5** Raisin effects on biomarkers of coronary heart disease in men and women aged 50-70 years. **M.J. Puglisi, U. Vaishnav, S. Shrestha, M. Torres-Gonzalez, R.J. Wood, J.S. Volek and M.L. Fernandez.** Univ. of Connecticut.

9:15 **351.6** A high ratio of dietary palmitic/linoleic acid increases postprandial NF-κB, small LDL and large HDL particles in normolipidemic females. **M. Rakhkovskaya, N. Yamada, D. Kaur, J.M. Whinter, M. Bataineh and P. Khosla.** Wayne State Univ.

9:30 **351.7** Effect of different content of saturated, monosaturated and polyunsaturated dietary fat on hepatic lipogenesis and fatty acid oxidation. **G. Ordaz, A.R. Tovar and N. Torres.** Natl. Inst. of Med. Sci. and Nutr. SZ, Mexico City.

9:45 **351.8** Absorption of sugarcane policosanols in golden Syrian hamsters. **C. Marinangeli, A. Kassis, D. Jain, N. Ebine and P. Jones.** McGill Univ., Ste. Anne de Bellevue and Univ. of Manitoba.

352. DIETARY BIOACTIVES: MECHANISMS OF ACTION AND MOLECULAR TARGETS II

Minisymposium

TUE. 8:00 AM—CONVENTION CENTER, ROOM 150A

CHAIRED: *J. BOMSER*

COCHAIRED: *K. WALSH*

8:00 **352.1** Docosahexaenoic acid and butyrate synergistically induce colonocyte apoptosis by enhancing mitochondrial calcium accumulation. **S.S.N. Kolar, R. Barhoumi, E.S. Callaway, J.R. Lupton and R.S. Chapkin.** Texas A&M Univ.

8:15 **352.2** Specialty potato extract and its anthocyanin fraction induce caspase-independent apoptosis by nuclear translocation of apoptosis inducing factor and endonuclease G in prostate cancer cells. **L. Reddivari, J. Vanamala, S.H. Safe and J.C. Miller, Jr..** Texas A&M Univ.

8:30 **352.3** Feeding resistant starch maintains elevated plasma levels of GLP-1 and PYY throughout the day and is associated with decreased body fat in rats. **J. Zhou, M.J. Keenan, A.M. Raggio, S. Tripathy, L. Shen, K.L. McCutcheon, M. Hegsted, R.T. Tulley and R.J. Martin.** Pennington Biomed. Res. Ctr. and LSU AgCtr. Sch. of Human Ecol.

8:45 **352.4** Binding of polyphenols and metabolites at physiological concentrations with lipoproteins: a protective mechanism against atherosclerosis. **J. Vinson, B. Rizzo, W-C. Tung and K. McGuigan.** Univ. of Scranton.

9:00 **352.5** Discovery of two eukaryotic nicotinamide riboside salvage pathways: new nutritional approaches to promote Sir2 functions. **C. Brenner.** Dartmouth Med. Sch.

9:15 **352.6** Temporal effects of almond skin polyphenols on plasma biomarkers of redox status. **P.E. Milbury, C-Y. Chen and J.B. Blumberg..** USDA at Tufts Univ.

9:30 **352.7** Activation of caspase-8 contributes induction of apoptosis in HCT-116 human colon cancer cells by the dietary compound fisetin. **D. Lim and J.H.Y. Park.** Hallym Univ., Republic of Korea.

9:45 **352.8** Serum insulin is lowered by rosehips in Sprague Dawley rats. **S.L. Purcell and C.M. Nelson.** Univ. of Prince Edward Island, Canada.

353. NUTRITION EDUCATION FOR WEIGHT MANAGEMENT IN CHILDREN AND OTHER HIGH RISK GROUPS

Minisymposium

TUE. 8:00 AM—CONVENTION CENTER, ROOM 150B

CHAIRED: *B. LOHSE*

COCHAIRED: *J. STOTTS*

8:00 **353.1** Development of a brief questionnaire on dietary behavior for use in low-income populations. **R. Cohen, C. Hanson, R. Briefel and J. Guthrie.** Mathematica Policy Res., Princeton and Washington, DC and USDA, Washington, DC.

8:15 **353.2** Effect of point of purchase nutrition information and value size pricing on fast food meal choices. **L.J. Harnack, S. French, M. Oakes, S. Rydell, M. Story and R. Jeffery.** Univ. of Minnesota, Minneapolis.

8:30 **353.3** Mothers of preschool children underestimate their own and their children's weight status. **G.G. Harrison, E. Jenks, S. Whaley, J. Gomez, S. McGregor and A. Ramirez.** UCLA Sch. of Publ. Hlth. and Publ. Hlth. Fndn. WIC Prog., Irwindale, CA.

8:45 **353.4** Relation between parenting style and child weight. **J.M. Rutledge, G.L. Topham, T.S. Kennedy, M.C. Page, L. Hubbs-Tait and A.W. Harrist.** Oklahoma State Univ.

9:00 **353.5** Maternal weight in pregnancy and childhood obesity: links and leverage points. **C.M. Olson, M.S. Strawderman and B.A. Dennison.** Cornell Univ. and New York State Dept. of Hlth., Menands.

9:15 **353.6** Translating knowledge about child feeding into adoption of practices: comparison of 2 approaches to targeting food aid and behavior change communication in maternal and child health programs. **P. Menon, M.T. Ruel, M.N.N. Mbuya, C.U. Loechl, G. Pelto, M. Arimond, J-P. Habicht and L. Michaud.** Cornell Univ., IFPRI, Washington, DC, Intl. Potato Ctr., Kampala, Uganda and World Vision-Haiti, Port-au-Prince.

9:30 **353.7** Shared correct knowledge: a measure to assess the influence of community health workers on mothers' knowledge acquisition in a behavior change communication program in rural Haiti. **M.N.N. Mbuya, P. Menon, J-P. Habicht, G. Pelto, E.A. Frongillo and M.T. Ruel.** Cornell Univ., Arnold Sch. of Publ. Hlth., Univ. of South Carolina and Intl. Food Policy Res. Inst., Washington, DC.

9:45 **353.8** Institute of Medicine evaluation framework for assessing progress in preventing childhood obesity. **S.K. Kumanyika, V.I. Kraak, C.T. Liverman and L.D. Meyers.** Univ. of Pennsylvania Sch. of Med. and Inst. of Med., The Natl. Academies.

354. PROTEIN AND AMINO ACID METABOLISM III

Minisymposium

TUE. 8:00 AM—CONVENTION CENTER, ROOM 152B

CHAIRED: *M. FAN*

COCHAIRED: *T. ANTHONY*

8:00 **354.1** Whole-body nitric oxide synthesis is reduced in enterally-fed piglets receiving an arginine-deficient diet. **K.L. Urschel, M. Rafii, P.B. Pencharz and R.O. Ball.** Univ. of Alberta and Univ. of Toronto.

8:15 **354.2** Insulin plays a critical role in amino acid-induced heat accumulation during anesthesia. **I. Yamaoka, M. Doi, Y. Kawano, M. Nakayama, Y. Watanabe, K. Ohba, K. Sugahara and F. Yoshizawa.** Otsuka Pharmaceut. Factory Inc. and Utsunomiya Univ., Japan.

8:30 **354.3** α-Aminoadipate δ-semialdehyde synthase mRNA knockdown reduces the lysine requirement of a murine hepatic cell line. **B.M. Cleveland, A.S. Kiess, G.E. Seidel and K.P. Blemings.** West Virginia Univ.

8:45 **354.4** In rats fed a high protein diet, almost half of the carbon skeletons derived from dietary amino acid deamination are not oxidized during the postprandial phase. **C. Gaudichon, D. Azzout-Marniche, C. Luengo, S. Dare, P. Even and D. Tomé.** INRA, INAPG, Paris.

9:00 **354.5** Preoperative versus intraoperative initiation of parenteral nutrition is associated with increased postoperative synthesis of albumin but not fibrinogen in patients undergoing colorectal surgery and receiving epidural analgesia. **L.J. Wykes, E.P. Nitschmann, L. Mazza, S. Meterissian and T. Schricker.** McGill Univ.

9:15 **354.6** Stimulation of whole body protein synthesis by insulin in neonates is dependent on the pattern of amino acids available. **R.A. Orellana, M.L. Fiorotto, F. Jahoor, D.G. Burrin, H.V. Nguyen, A. Suryawan and T.A. Davis.** USJA, Baylor Col. of Med.

9:30 **354.7** Fractional synthesis rates of multiple isolated mitochondrial and nonmitochondrial proteins in rat skeletal muscle. **A. Jaleel, D. Morse, K. Klaus, K. Short, L. Ward, C. Ford and K.S. Nair.** Mayo Clin.

9:45 **354.8** BCATm KO mice have elevated branched chain amino acids, a propensity to be lean, and show improvements in endpoints associated with obesity co-morbidities. **P. She, S. Bronson, C. Van Horn, T. Reid, C. Lynch and S.M. Hutson.** Penn State Col. of Med. and Wake Forest Univ. Sch. of Med.

355. IRON NUTRITION AND METABOLISM

Minisymposium

TUE. 8:00 AM—CONVENTION CENTER, ROOM 152A

CHAIRED: *M. REDDY*

COCHAIRED: *B. LONNERDAL*

8:00 **355.1** How ferritin releases its iron through entry into lysosomes and proteolysis, and a potential role for DMT1. **E.N. Sauble, A. Gonzalez and M.C. Linder.** California State Univ.-Fullerton.

8:15 **355.2** Suckling copper-deficient mice and rats exhibit opposite changes in plasma iron, different impacts on brain iron concentration, but both exhibit severe anemia. **J.W. Pyatskowit, K.T. Nelson, A.A. Gybina and J.R. Prohaska.** Univ. of Minnesota Med. Sch.-Duluth.

8:30 **355.3** Dietary iron deficiency in BXD strain 40 mice causes diurnal-dependent alterations in brain iron and activity. **E.L. Unger, D.M. Konrad, L.E. Bianco, S.E. Rundle, B.C. Jones and J.L. Beard.** Penn State.

8:45 **355.4** Dietary inulin upregulates the expression of intestinal iron transporters, increases villus surface area, and alters microflora in iron deficient and adequate rats. **E. Tako, R.P. Glahn, R. Welch, X. Lei, K.H. Paul and D.D. Miller.** Cornell Univ.

9:00 **355.5** Iron absorption by Belgrade rat pups during lactation. **K.J. Thompson, R.M. Molina, J.D. Brain and M. Wessling-Resnick.** Harvard Sch. of Publ. Hlth.

9:15 **355.6** A61-C haptoglobin gene promoter polymorphism and protection from malaria in Gambian children. **S.E. Cox, C. Doherty, S.H. Atkinson, C.V. Nweneka, H. Ghattas, T. Fulford, K. Rockett, D. Kwiatkowski and A.M. Prentice.** London Sch. of Hyg. and Trop. Med., MRC Keneba, Gambia and Wellcome Trust Ctr. for Human Genet., Oxford.

9:30 **355.7** Comparison of plasma ferritin concentration versus the ratio of plasma transferrin receptor/ferritin to estimate total body iron stores: results of four intervention trials. **Z. Yang, K.G. Dewey, B. Lonnerdal, O. Hernell, C.M. Chaparro, S. Adu-Afarwuah, E.R. McLean, R.J. Cohen, M. Domellof, L.H. Allen and K.H. Brown.** Univ. of California-Davis, Umea Univ., Sweden and USDA, Davis.

9:45 **355.8** Iron status at birth, umbilical cord clamping time, breastfeeding status and infant sex are determinants of iron status at six months of age. **C.M. Chaparro, L.M. Neufeld and K.G. Dewey.** Univ. of California-Davis and Natl. Inst. of Publ. Hlth., Cuernavaca, Mexico.

356. LEADING THE WAY IN OSTEOPOROSIS PREVENTION: NUTRITION EDUCATION RESEARCH STRATEGIES

Symposium

(Supported by an educational grant from National Dairy Council)

TUE. 10:30 AM—CONVENTION CENTER, BALLROOM A

CHAIRED: *K. CHAPMAN-NOVAKOFSKI*

10:30 Osteoporosis synopsis; introduction of speakers. **K. Chapman-Novakofski.** Univ. of Illinois at Urbana-Champaign.

10:40 Improving bone health in adolescence through targeted behavioral intervention: adequate calcium today. **C.J. Boushey.** Purdue Univ.

11:10 A school-based osteoporosis program: jump start your bones. **K. Morgan.** Rutgers Univ.

11:40 Cluing in on calcium: dietary assessments and outcome measurements. **K. Plawecki.** Univ. of Illinois at Urbana-Champaign.

12:10 The BEST exercise program for osteoporosis prevention. **L. Houtkooper.** Univ. of Arizona.

357. PROTEIN METABOLISM AND SARCOPENIA IN THE ELDERLY

Symposium

(Supported by an educational grant from National Dairy Council)

TUE. 10:30 AM—CONVENTION CENTER, ROOM 151A

CHAIRED: *K.R. SHORT*

COCHAIRED: *T.G. ANTHONY*

10:30 Dietary protein requirements in the elderly. **W. Campbell.** Purdue Univ.

10:55 Q&A.

11:00 Modulation of postprandial protein anabolism in elderly subjects. **Y. Boirie.** Univ. of Auvergne, INRA, France.

11:25 Q&A.

11:30 Interaction between insulin resistance and muscle protein metabolism. **E. Volpi.** Univ. of Texas Med. Branch.

11:55 Q&A.

12:00 Muscle protein metabolism changes with aging and exercise training. **K.R. Short.** Mayo Clin.

12:25 Q&A.

12:30 Panel discussion.

358. MOLECULAR TARGETS IN DIET AND CANCER PREVENTION

Minisymposium

TUE. 10:30 AM—CONVENTION CENTER, ROOM 150A

CHAIRED: *N. HORD*

COCHAIRED: *J. BOMSER*

10:30 Chair's introduction.

10:31 **358.1** Glycitein induces cellular differentiation in nontumorigenic prostate epithelial cells. **E. Clubbs and J. Bomser.** Ohio State Univ.

10:46 **358.2** Lycopene and androgen effects on LNCaP cell growth and gene expression. **S.E. Trasino, T.T.Y. Wang and E.H. Harrison.** USDA, Beltsville and Ohio State Univ.

11:01 **358.3** Omega-3 polyunsaturated fatty acids alter raft lipid composition and decrease epidermal growth factor receptor levels in lipid rafts of human breast cancer cells. **C.J. Field, P.D. Schley and D.N. Brindley.** Univ. of Alberta.

11:16 **358.4** Green tea increases the anti-inflammatory tristetraprolin and decreases the pro-inflammatory tumor necrosis factor mRNA levels in rats. **H. Cao, M.A. Kelly, F. Kari, H.D. Dawson, S. Coves, A.M. Roussel and R.A. Anderson.** USDA, Beltsville, NIEHS, NIH, Research Triangle Park, Unilever France, Rueil-Malmaison and J. Fourier Univ., La Tronche, France.

11:31 **358.5** A diet containing fish oil and pectin ameliorates radiation-enhanced colon carcinogenesis by suppression of PPARδ and PGE synthase-2 ($PGES_2$) and elevation of PGE_3. **J. Vanamala, A. Glagolenko, P. Yang, R.J. Carroll, M.E. Murphy, R.A. Newman, R.S. Chapkin, N.D. Turner and J.R. Lupton.** Texas A&M Univ. and Univ. of Texas M.D. Anderson Cancer Ctr.

11:46 **358.6** Regulation of aberrant cell processes with non-toxic doses of sphingosine and enigmol: initial investigation of the chemopreventive potential of natural and synthetic sphingoid bases in a cell model for progressive ovarian cancer. **P.C. Roberts, N. Doyon-Reale, A. Baxa and E.M. Schmelz.** Wayne State Univ. Sch. of Med. and Wayne State Univ.

12:01 **358.7** Suppression of growth and progression of breast cancer xenografts by orally administered complex sphingolipids. **E.M. Schmelz, K.W. Simon, Y. Malayev and P.C. Roberts.** Wayne State Univ. and Wayne State Univ. Sch. of Med.

12:16 **358.8** Western diet and lifestyle risk factors and colon crypt expression of TGFα, TGFβ_1, and TGFβRII in the markers of adenomatous polyps II case-control study. **C.R. Daniel, A. Gonzalez-Feliciano, V. Fedirko, C. Dash, A. Shaukat and R.M. Bostick.** Emory Univ.

359. OBESITY ASPECTS IN CHILDREN II

Minisymposium

Tue. 10:30 am—Convention Center, Room 150B

Chaired: *B.C. Tohill*

Cochaired: *N. Hays*

10:30 **359.1** Relationship of overweight with PPARy2, GRL and CNTF polymorphisms in a Dutch Children Cohort. **F. Rutters, A. Nieuwenhuizen, N. Vogels, F. Bouwman, E. Mariman and M. Westerterp-Plantenga.** Univ. of Maastricht, The Netherlands.

10:45 **359.2** Fructose intake is a predictor of ldlLDL particle size in overweight schoolchildren. **I. Aeberli, M. Zimmermann, L. Molinari, R. Lehmann, D. l'Allemand, G.A. Spinas and K. Berneis.** ETH Zurich, Univ. Hosp. and Children's Hosp., Zurich.

11:00 **359.3** Lipid profiles and physical activity in Mexican adolescents. **R. Valdes-Ramos, A. Albarran, F. Farfán, A. Benítez-Arciniega and G. Zúñiga-Torres.** Fac. of Med., Univ. Autonoma Estado de Mexico.

11:15 **359.4** Metabolic syndrome and its association with diet and physical activity in U.S. adolescents. **Y. Pan and C. Pratt.** Univ. of Maryland College Park and NHLBI, NIH.

11:30 **359.5** Objectively measured physical activity is independently associated with insulin resistance in children after adjusting for epidemiological estimates of body composition. **S.Á. Arngrímsson, T. Sveinsson, I. Gunnarsdóttir, G.I. Pálsson, I. Thorsdottir and E. Jóhannsson.** Iceland Educ. Univ. and Landspitali-Univ. Hosp. and Univ. of Iceland.

11:45 **359.6** An increase in dietary carbohydrates as an approach to weight reduction in children is effective only when accompanied with nutrition education. **J.L. Rosado, M.R. Arellano, K. Montemayor, O.P. García and M.C. Caamaño.** Autonomout Univ. of Queretaro, Mexico.

12:00 **359.7** Body image perceptions, motivators and modes to achieve desired body size among overweight Black preadolescent girls. **V. Sawyer, M.B. Pierce and A.M. Ferris.** Univ. of Connecticut, Storrs and East Hartford.

12:15 **359.8** Excess growth during childhood is associated with adult coronary heart disease and stroke. **J.L. Baker, L.W. Olsen and T.I.A. Sørensen.** Inst. of Prevent. Med., Copenhagen.

360. DIET AND FOOD SECURITY IN DIVERSE COMMUNITIES I

Minisymposium

Tue. 10:30 am—Convention Center, Room 152B

Chaired: *D.J. Pinero*

Cochaired: *K.J. Lancaster*

10:30 Chair's introduction.

10:45 **360.1** Nutritional vulnerability among food-insecure Canadian adults and children. **S. Kirkpatrick and V. Tarasuk.** Univ. of Toronto.

11:00 **360.2** Food security and women's BMI in households with and without children. **K. Radimer, Q. Gu and C. Ogden.** CDC, Hyattsville, MD .

11:15 **360.3** The effect of a Food Stamp Nutrition Education program on the food insecurity of low-income women participants. **H.A. Eicher-Miller, A.C. Mason, A.R. Abbott, G.P. McCabe and C.J. Boushey.** Purdue Univ. and Colorado State Univ. Col. of Applied Human Sci.

11:30 **360.4** Food insecurity and weight status among rural and urban Latino immigrants. **K.P. Ingram, C.M. Martin and L.A. Haldeman.** Univ. of North Carolina at Greensboro.

11:45 **360.5** Commercial baby food consumption and dietary diversity in a statewide sample of WIC infants. **K.M. Hurley and M.M. Black.** Univ. of Maryland Sch. of Med.

12:00 **360.6** Psychosocial and sociodemographic factors affecting fruit and vegetable consumption of WIC participants in two rural Mississippi Delta communities. **L. Lomax and A.C. Wetter.** Sch. of Hlth. Promotion and Human Develop., Univ. of Wisconsi -Stevens Point.

12:15 **360.7** Assessing the impact of diet and healthcare in a faith-based, non-profit rescue shelter in metropolitan Detroit. **J.M. Whinter, M. Rakhovskaya, D. Kaur, N. Yamada, R. Waller and P. Khosla.** Wayne State Univ. and Detroit Rescue Mission Ministries.

361. ZINC NUTRITION AND METABOLISM

Symposium

Tue. 10:30 am—Convention Center, Room 152A

Chaired: *E. Ho*

Cochaired: *H. Freake*

10:30 **361.1** Zinc suppresses hepatic Zip10 expression through activation of MTF-1. **L.A. Lichten, J.P. Liuzzi and R.J. Cousins.** Univ. of Florida.

10:45 **361.2** Cultured cells differ in their homeostatic response to zinc deprivation. **A. Dutta, B. Grattan, K. Sankavaram and H.C. Freake.** Univ. of Connecticut.

11:00 **361.3** Impact of zinc deficiency on the alveolar epithelial barrier function. **P.C. Joshi, W. Jabber and D.M. Guidot.** Emory Univ., Atlanta VA Med. Ctr.

11:15 **361.4** BALB/c mice provide a unique model for the study of zinc deficiency in the absence of weight loss and stress. **J. Silvestre, R.W. Regenhardt, K.A. Herrlinger-Garcia, R.J. Cousins and B. Langkamp-Henken.** Univ. of Florida.

11:30 **361.5** Dose response relationship between dietary zinc and body weight gain in rats: curve analysis by Fisher's model. **K. Yokoi and A. Konomi.** Seitoku Univ. Grad. Sch., Japan.

11:45 **361.6** Zinc (Zn) absorption: comparison of extrinsic label with intrinsic Zn in test meals. **X-Y. Sheng, K.M. Hambidge, N.F. Krebs, L.V. Miller, J.E. Westcott and S. Lei.** Shanghai Jiao Tong Univ. Sch. of Med., Xin-Hua Hosp., People's Republic of China and Univ. of Colorado Hlth. Sci. Ctr.

12:00 **361.7** Maternal plasma zinc and the risk of isolated oral clefts in children in Utah. **T. Tamura, R.G. Munger, K.E. Johnston, M. Feldkamp, R. Phister, L. Botto and J. Carey.** Univ. of Alabama at Birmingham, Utah State Univ. and Utah Dept. of Hlth., Salt Lake City.

12:15 **361.8** Additional zinc delivered in a liquid supplement, but not a fortified porridge, increased fat-free mass accrual in young Peruvian children with mild-to-moderate stunting. **J.E. Arsenault, D. López de Romaña, M.E. Penny, M.D. Van Loan and K.H. Brown.** Univ. of California-Davis, Nutr. Res. Inst., Lima, Peru and USDA, Davis.

362. THE ATWATER LECTURE

(Supported by an educational grant from USDA/ARS Beltsville)

TUE. 12:45 PM—CONVENTION CENTER, BALLROOM A

Speaker: **Barbara Rolls.** Penn State.

Title: High Satiety: Eating Less in an Obesigenic Environment

363. THE ROLE OF THE LYMPHATIC SYSTEM IN MACRONUTRIENT SENSING AND METABOLIC HOMEOSTASIS

Symposium

TUE. 3:00 PM—CONVENTION CENTER, BALLROOM A

CHAIRED: *H.E. RAYBOULD*

COCHAIRED: *S.H. ADAMS*

3:00 Chair's introduction.

3:10 Vascularity and function of the lymphatics in the regulation of energy balance and adiposity. **G. Oliver.** St. Jude Children's Res. Hosp., Memphis.

3:40 Q&A.

3:45 Vagal afferents: anatomy and potential role in regulation of nutrient-sensing, gut hormone action, and metabolic homeostasis. **H-R. Berthoud.** Pennington Biomed. Res. Ctr.

4:15 Q&A.

4:20 Lymphatic nutrient-sensing and gut-lymph-CNS cross-talk. **H.E. Raybould.** Univ. of California-Davis.

4:50 Q&A.

4:55 Lymphatic adipocytes. **C.M. Pond.** The Open Univ., UK.

5:25 Q&A.

364. PUBLIC HEALTH IMPLICATIONS OF TRANS FATTY ACID-FREE ALTERNATIVES TO PARTIALLY HYDROGENATED SOYBEAN OIL: AN ASSESSMENT OF REPLACEMENT SCENARIOS

Conference

(*Sponsored by:* ILSI North America Technical Committee on Dietary Lipids)

TUE. 3:00 PM—CONVENTION CENTER, ROOM 151B

CHAIRED: *M. LEFEVRE*

COCHAIRED: *B. FLICKINGER*

3:00 The complexities of edible fats and oils used by the food industry, and five scenarios for the replacement of *trans* fatty acids. **B. Flickinger.** Archer Daniels Midland Co.

3:20 A new dietary assessment model. **B. Petersen.** E^{x}ponent Inc.

3:35 Baseline evaluation: *trans* fatty acid intakes in the U.S. population. **P. Kris-Etherton.** Penn State.

4:00 Assessment of *trans* fatty acid intakes under five replacement scenarios. **M. Lefevre.** Pennington Biomed. Res. Ctr.

4:25 Implications for traditional and emerging cardiovascular disease risk factors. **R. Mensink.** Maastricht Univ., The Netherlands.

365. ANTIOXIDANTS AND FREE RADICAL DEFENSES II

Minisymposium

TUE. 3:00 PM—CONVENTION CENTER, ROOM 150A

CHAIRED: *J. WHELAN*

COCHAIRED: *K. FRITSCHE*

3:00 **365.1** Green tea and bilberry extracts but not vitamin C protect retinal epithelial cells from oxidative damage. **A. Shah and S. Kurlandsky.** Syracuse Univ.

3:15 **365.2** Flaxseed lignans protect against acid aspiration-induced acute lung injury in vivo and H_2O_2-induced cell death in vitro. **J.C. Lee, E. Arguiri, C.C. Solomides and M. Christofidou Solomidou.** Univ. of Pennsylvania and Temple Univ.

3:30 **365.3** The Trx2 transgene ameliorates age-related oxidation of plasma Cys/CySS redox state in aging mice. **S.E. Craige, J.M. Hansen, Y-M. Go and D.P. Jones.** Emory Univ.

3:45 **365.4** Dietary flaxseed prevents fibrosis and oxidative lung damage and improves mouse survival in experimental thoracic radiation injury. **J.C. Lee, K. Cengel, S. Kanterakis, R. Krochak, E. Arguiri, C.C. Solomides and M. Christofidou Solomidou.** Univ. of Pennsylvania and Temple Univ.

4:00 **365.5** Survey on extrinsic factors and skin condition and college majors¡¦ knowledge of antioxidants. **H-P. Chang and C.F. Tam.** California State Univ.-Los Angeles.

4:15 **365.6** Application in healthy subjects of an iron-induced fecal oxidative response test, using an in vitro reactive oxygen species generation system. **M.N. Orozco, N.W. Solomons, J.K. Friel and K. Schuemann.** CeSSIAM, Guatemala City, Univ. of Manitoba and Tech. Univ. of Munich.

4:30 **365.7** Glutathione kinetics in preterm infants. **F. te Braake, H. Schierbeek, K. de Groof, A. Vermes and J. van Goudoever.** Erasmus Med. Ctr., Sophia Children's Hosp., The Netherlands .

4:45 **365.8** Oral quercetin supplementation and blood oxidative stress during ultra-marathon competition. **J.C. Quindry, S.R. McAnulty, M. Hudson, P. Hosick, C. Dumke, L.S. McAnulty, D. Henson and D.C. Nieman.** Appalachian State Univ.

366. CALCIUM, VITAMINS K AND D, BONE MINERAL DENSITY II

Minisymposium

TUE. 3:00 PM—CONVENTION CENTER, ROOM 150B

CHAIRED: *L.G. SALDANHA*

3:00 **366.1** Worldwide trends in dairy production and consumption and sustainable solution for the worldwide calcium intake inadequacy problem. **Y. Wang and S. Li.** Johns Hopkins Sch. of Publ. Hlth. and Qingdao Univ., People's Republic of China.

3:15 **366.2** Calcium requirement: new estimations for men and women by cross-sectional analyses of metabolic calcium balance data. **C.D. Hunt and L.K. Johnson.** USDA, Grand Forks and Univ. of North Dakota.

3:30 **366.3** The effects of vitamin D receptor polymorphisms on bone mineral density in men and women. **K.J. Whitt, S.M. Ling, A.J.G. Bos, D.C. Muller, S.M. Roth and L. Ferrucci.** NIA, NIH, Baltimore and George Mason Univ. Col. of Nursing and Hlth. Sci. and Univ. of Maryland College Park.

3:45 **366.4** Clinical correlates and heritability of vitamins K and D. **M.K. Shea, E.J. Benjamin, J. Dupuis, J.M. Massaro, P.F. Jacques, R.B. D'Agostino, J.M. Ordovas, C.J. O'Donnell, B. Dawson-Hughes, R.S. Vasan and S.L. Booth.** USDA at Tufts Univ., NHLBI Framingham Heart Study, Boston Univ. Sch. of Med. and Boston Univ.

4:00 **366.5** WISE-2005: combined aerobic and resistive exercise may help mitigate bone loss during 60-d simulated microgravity in women. **S.R. Zwart, M.A. Heer, S.M.C. Lee, B. Macias, S. Schneider, S. Trappe, T. Trappe, A. Hargens and S.M. Smith.** NASA, Houston, DLR, Cologne, Wyle, Houston, UCSD, Univ. of New Mexico and Ball State Univ. .

4:15 **366.6** Artificial gravity as a bone loss countermeasure in simulated weightlessness. **S.M. Smith, S.R. Zwart, P.L. Gillman, G.E. Crawford, A. LeBlanc, L.C. Shackelford and M.A. Heer.** NASA Johnson Space Ctr., Univs. Space Res. Assn. and EASI , Houston and DLR, Inst. of Aerospace Med., Cologne.

4:30 **366.7** An inulin-type fructan enhances calcium absorption in young adults throughout the GI tract with the largest effect occurring in the colon. **S.A. Abrams, K. Hawthorne, O. Aliu, P. Hicks, Z. Chen and I. Griffin.** Baylor Col. of Med.

4:45 **366.8** Dietary long-chain inulin improves body composition but not bone density in growing female rats. **J.A. Jamieson, N.R. Ryz, C.G. Taylor and H.A. Weiler.** Sch. of Dietetics and Human Nutr., McGill Univ. and Univ. of Manitoba.

367. FOOD INTAKE REGULATION II

Minisymposium

TUE. 3:00 PM—CONVENTION CENTER, ROOM 152B

CHAIRED: *C. PELKMAN*

COCHAIRED: *B. BURTON-FREEMAN*

3:00 **367.1** How do energy density and portion size of an entrée influence preschool children's energy intake? **K.E. Leahy, L.L. Birch, J.O. Fisher and B.J. Rolls.** Penn State and USDA, Baylor Col. of Med.

3:15 **367.2** Does changing the form of soup affect food intake and satiety? **J.E. Flood and B.J. Rolls.** Penn State.

3:30 **367.3** Self-reported and actual eating rates: relationships with body fat and food intake regulation. **K.J. Melanson and A.M. Andrade.** Univ. of Rhode Island.

3:45 **367.4** The satiety effects of L-phenylalanine are modulated by menstrual cycle phase. **R.J. Pohle, J.E. Nyrop, E.Y.M. Madore and C.L. Pelkman.** Univ. at Buffalo and Penn State .

4:00 **367.5** GLUT2 polymorphism modifies the intake of dietary carbohydrates in individuals with type 2 diabetes. **K.M. Eny, B. Fontaine-Bission, T.M.S. Wolever and A. El-Sohemy.** Univ. of Toronto.

4:15 **367.6** Exocrine secretion of the leptin-leptin receptor complex by the gastric mucosa. **P.G. Cammisotto, D. Gingras and M. Bendayan.** Univ. of Montreal.

4:30 **367.7** Long-term exposure to high protein diet or high fat diet have opposite effects on vagal afferent sensitivity to lumenal macronutrients and ip cholecystokinin. **W. Nefti, N. Darcel, G. Fromentin and D. Tomé.** INAPG, Paris.

4:45 **367.8** Acute and chronic high protein meals activate neuronal pathways in brainstem and hypothalamic areas involved in satiety in rats. **R. Faipoux, D. Tomé, S. Gougis, N. Darcel and G. Fromentin.** INAPG, Paris.

368. DIETARY FIBER, FRUITS, VEGETABLES AND GRAINS I

Minisymposium

TUE. 3:00 PM—CONVENTION CENTER, ROOM 152A

CHAIRED: *E. DE MEJIA*

COCHAIRED: *E. SCHMELZ*

3:00 **368.1** Treatment of metabolic syndrome with a whole-grain enriched hypocaloric diet. **H.I. Katcher, R.S. Legro and P.M. Kris-Etherton.** Penn State and Penn State Col. of Med.

3:15 **368.2** Whole grains, refined grains, and cereal fiber measured using 7-d diet records: associations with risk factors for chronic disease. **P.K. Newby, J. Maras, P. Bakun, D. Muller, L. Ferrucci and K.L. Tucker.** USDA at Tufts Univ. and NIA, NIH, Baltimore.

3:30 **368.3** Effect of novel maize-based dietary fibers on postprandial glycemia. **C.W.C. Kendall, A.R. Josse, S.M. Potter, A.J. Hoffman and D.J.A. Jenkins.** Univ. of Toronto, St. Michael's Hosp. and Tate & Lyle, Decatur, IL.

3:45 **368.4** The effects of soluble modified cellulose on lipid metabolism by analyzing the fecal fat profiles in hamsters. **Y-J. Hong, W. Yokoyama and M. Turowski.** USDA, Albany, CA and Dow Chem. Co.

4:00 **368.5** Effect of mouse maltase-glucoamylase knockout on starch digestion to glucose. **B.L. Nichols, C.C. Robayo-Torres, Z. Ao, B.R. Hamaker, G.D. Brayer, E.E. Sterchi and R. Quezada-Calvillo.** Baylor Col. of Med., Purdue Univ., Univ. of British Columbia, Univ. of Bern and Autonomous Univ. of San Luis Potosi, Mexico.

4:15 **368.6** Glucose tolerance modifies the effects of high-viscosity hydroxypropylmethylcellulose on postprandial glucose and insulin excursions. **K.C. Maki, M.L. Carson, M.P. Miller, M. Turowski, M. Bell, D.M. Wilder and M.S. Reeves.** Provident Clin. Res., Bloomington, IN and Dow Chemical Co., Midland, MI.

4:30 **368.7** Novel maize-based dietary fibers have comparable in vitro fermentability to inulin and partially-hydrolyzed guar gum. **M.L. Stewart and J.L. Slavin.** Univ. of Minnesota, St. Paul.

4:45 **368.8** Clinical effects of food product BAPOL (insoluble fibers). **L. Tell, S. Lysenkov and E. Dalenov.** Kazakhstan Med. Acad.

Pathology

369. VASCULAR DEVELOPMENT, GROWTH AND ADAPTATIONS MINI-MEETING: VESSEL CELL BIOLOGY AND DEVELOPMENT

Symposium

(*Sponsored by:* AAA and NAVBO)

TUE. 8:00 AM—CONVENTION CENTER, ROOM 103A

CHAIRED: *V. BAUTCH*

Vascular Biology

See Session 314 on page 81 for session details.

370. AUTOPHAGY AND DISEASE PATHOGENESIS: CELL SUICIDE OR SELF PRESERVATION

Symposium

TUE. 8:30 AM—CONVENTION CENTER, ROOM 144A/B

CHAIRED: *X-M. YIN*

COCHAIRED: *K.A. ROTH*

8:30 Introduction. **X-M. Yin.** Univ. of Pittsburgh Sch. of Med.

8:40 Autophagy failure and neurodegeneration in Alzheimer's disease. **R.A. Nixon.** NYU Sch. of Med.

9:20 Novel connections between autophagy and cell death. **B. Levine.** Univ. of Texas Southwestern Med. Ctr.

10:00 Tumor cells utilize autophagy to survive chemotherapy: a treatable form of drug resistance. **C.B. Thompson.** Univ. of Pennsylvania.

10:40 Selective autophagy: something else than keeping cells clean. **A.M. Cuervo.** Albert Einstein Col. of Med.

371. STEM CELL ENGINEERING FOR THERAPEUTICS

Symposium

TUE. 8:30 AM—CONVENTION CENTER, ROOM 140A

CHAIRED: *A. WAGERS AND S.P.S. MONGA*

Stem Cells

8:30 Skeletal muscle stem cells: implications for cell therapy. **A. Wagers.** Harvard Med. Sch. and Harvard Stem Cell Inst.

9:15 Amnion-derived stem cells. **S.C. Strom.** Univ. of Pittsburgh Sch. of Med.

10:00 Stem cell delivery by cell sheet engineering: no more lost in transplantation. **M. Yamato.** Tokyo Women's Med. Univ.

10:45 Regenerative medicine:new approaches to healthcare. **A. Atala.** Wake Forest Univ. Sch. of Med.

372. CELL ADHESION AND SIGNALING PATHWAYS

Minisymposium

TUE. 8:30 AM—CONVENTION CENTER, ROOM 149A

CHAIRED: *R. WEST*

COCHAIRED: *C.M. DOERSCHUK*

8:30 **372.1** CD18 regulates neutrophil production in the bone marrow. **J.C. Gomez and C.M. Doerschuk.** Case Western Reserve Univ. and Rainbow Babies and Children's Hosp.

8:45 **372.2** Cleaved high molecular weight kininogen (HKa) enhances the association of human $\alpha v\beta 3$ to the complex formed by urokinase and urokinase plasminogen activator receptor. **C.D. Lester, R. Pixley, K. Bdeir, D. Cines and R. Colman.** Temple Univ. and Univ. of Pennsylvania Sch. of Med.

9:00 **372.3** $\alpha v\beta 3$ Integrin-ligand binding is regulated by protein kinase A. **A.M. Gonzalez, J. Claiborne and J.C.R. Jones.** Northwestern Univ., Chicago.

9:15 **372.4** A novel model system for analyzing the functional domains of CEACAM1-4S. **E.L. Lawson and D.C. Hixson.** Brown Univ. and Rhode Island Hosp.

9:30 **372.5** Investigation of the potential anti-inflammatory properties of simvastatin. **K.A. Eccles, S. Homer-Vanniasinkham, K. Porter and A. Graham.** Univ. of Bradford, Leeds Gen. Infirmary and Univ. of Leeds, UK.

9:45 **372.6** PTEN and adherens junctions during osteoblastogenesis. **M. Naski and A. Guntur.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio.

10:00 **372.7** Regulation of fibrocyte-derived CXC chemokine receptor 4 by hypoxia and the phosphatidylinositol 3-kinase/mammalian target of rapamycin signaling pathway. **C.J. Oliver, M.D. Burdick, K. Hong and R.M. Strieter.** Univ of Virginia and UCLA.

10:15 **372.8** Signalling pathways that regulate human eosinophil migration. **A. Langlois, C. Ferland, N. Pagé and M. Laviolette.** Laval Hosp., Ste-Foy, Canada.

10:30 **372.9** Cyclic AMP response element binding protein regulation by asbestos. **A. Shukla, T.F. Barrett, C.A. Barlow, K.M. Lounsbury and B.T. Mossman.** Univ. of Vermont.

10:45 **372.10** Leptin stimulates angiogenesis in myocardial endothelial cells: involvement of p47phox NADPH oxidase. **J-x. Chen, H. Yu, Q-H. Tuo, H. Zeng and J. Aschner.** Vanderbilt Univ. Med. Ctr.

11:00 **372.11** Redox activation of Ref-1 potentiates cell survival following myocardial ischemia reperfusion injury. **N. Gurusamy, G. Malik, N.V. Gorbunov and D.K. Das.** Univ. of Connecticut Sch. of Med. and Walter Reed Army Inst. of Res.

11:15 **372.12** Regulation of the nuclear protein kinase CK1αLS by mitogenic levels of hydrogen peroxide. **J.R. Stone, S. Bedri, S.M. Cizek and I. Rastarhuyeva.** Massachusetts Gen. Hosp., Harvard Med. Sch.

373. EMERGING TECHNOLOGIES AND GENETICS

Minisymposium

TUE. 8:30 AM—CONVENTION CENTER, ROOM 149B

CHAIRED: *M. MERINO*

COCHAIRED: *T.L. SANDER*

Molecular Pathology

8:30 Introductory remarks.

8:35 **373.1** Protein expression profiling in the spectrum of renal tumors. **V.A. Valera, E. Li-Ning Tapia, L. Teller, D.D. Roberts, W.M. Linehan and M.J. Merino.** NCI, NIH.

8:50 **373.2** Picquant—an automated platform for biomarker discovery in complex patient materials. **D.J. Templeton, L.H. Bachmann, J. Cross, M. Murgai, S. Moshnikov and C.E. Lyons, Jr..** Univ. of Virginia.

9:05 **373.3** Comparative proteome analysis of PAI-1 and TNF-α-derived endothelial microparticles. **J. Ou, S. Kaul, A.S. Greene, K.A. Pritchard, Jr., K.T. Oldham and T.L. Sander.** Med. Col. of Wisconsin.

9:20 **373.4** A novel fluorochrome linked immunosorbent assay for the complete analysis of the mannose binding lectin complement pathway. **M.C. Walsh, L.A. Shaffer, S.C. Body, S.K. Shernan, A.A. Fox, C.D. Collard, R.P. Taylor and G.L. Stahl.** Brigham and Women's Hosp., Harvard Med. Sch., Baylor Col. of Med. and Univ. of Virginia Sch. of Med. (Presented by **B.J. Guikenla.**)

9:35 **373.5** Russell body formation and apoptosis in myocilin-caused primary open-angle glaucoma: rescue by the chemical chaperone sodium 4-phenylbutyrate. **J. Roth, G.H-F. Yam, K. Gaplovska-Kysela and C. Zuber.** Univ. of Zurich.

9:50 **373.6** Mutations in lamin A/C and their binding partners and nuclear envelope phenotype in cardiomyocytes from dilated cardiomoyopathy patients. **P. Gupta, Z. Bilinska, N. Sylvius, J. Veinot, P. Bolongo, E. Boudreau, T. Jackson and F. Tesson.** Ottawa Heart Inst. and Ottawa Hosp., Univ. of Ottawa and Inst. of Cardiol., Warsaw.

10:05 **373.7** DUX4 transcriptionally regulates paired-like homeodomain transcription factor 1. **Y-W. Chen, M. Dixit, A. Brown and A. Belayew.** Children's Natl. Med. Ctr., George Washington Univ. and Univ. of Mons-Hainaut, Belgium.

10:20 **373.8** An association study of common SNPs in SREBP-2 and SCAP genes with simvastatin response in Saudi patients. **S. Alzahrani, M. Al-Najai, F. Al-Mohanna, B. Meyer, M. Al-Shaheed, G. Mohammed, M. Pirmohamed and N. Dzimiri.** King Faisal Specialist Hosp. and Res. Ctr., Saudi Arabia and Univ. of Liverpool.

374. INFLAMMATION AND INNATE IMMUNITY

Minisymposium

TUE. 8:30 AM—CONVENTION CENTER, ROOM 144C

CHAIRED: *P. SRIRAMARAO*

COCHAIRED: *V.M. MILLER*

Inflammation

8:30 **374.1** Histamine induces cyclooxygenase-2 expression and prostaglandin I2 production in human coronary artery endothelial cells via H-1 receptors involving MAP kinase p38 activation. **X. Tan, D.J. Stechschulte and K.N. Dileepan.** Univ. of Kansas Med. Ctr.

8:45 **374.2** Montelukast regulation of cysteinyl leukotriene release by blood eosinophils. **F. Chouinard, A. Langlois, N. Flamand, C. Ferland and M. Laviolette.** Laval Hosp., Canada and Univ. of Michigan.

9:00 **374.3** A single in vivo exposure to low-dose LPS decreases platelet life-span through TLR4 in mice. **M. Jayachandran, K. Hashimoto, G.J. Brunn, W.G. Owen and V.M. Miller.** Mayo Clin.

9:15 **374.4** MMP2 and MMP9 mediate innate immune response to pneumococcal pneumonia. **K.J. Greenlee, D.B. Corry, P.W. Park and F. Kheradmand.** Baylor Col. of Med.

9:30 **374.5 Withdrawn.**

9:45 **374.6** High affinity IgE receptor diffusional dynamics measured by single quantum dot tracking in resting and activated cells. **N. Andrews, K.A. Lidke, G. Hsieh, B.S. Wilson, J.M. Oliver and D.S. Lidke.** Univ. of New Mexico and Sandia Natl. Labs.

10:00 **374.7** A critical role for Akt in macrophage cytotoxicity to antibody-coated tumor cells. **T. Joshi, L.P. Ganesan, C. Cheney, N. Muthusamy, J.C. Byrd, M.C. Ostrowski and S. Tridandapani.** Ohio State Univ.

NO SMOKING IN SESSION ROOMS, POSTER OR EXHIBIT AREA

10:15 **374.8** Increased inflammation, hyaluronan and respiratory distress in mice overexpressing the hyaluronan receptor RHAMM in macrophages. **R.C. Savani, H. Zhao, Z. Cui, E. Goulet, J. Liao and H.M. DeLisser.** Univ. of Texas Southwestern Med. Ctr. and Children's Hosp. of Philadelphia, Univ. of Pennsylvania.

10:30 **374.9** Pulmonary gelatinases in lung bronchiolitis models. **J. Martires, J. Svetlecic, W. Yacoub, A. Molteni, T. Quinn and B. Herndon.** Univ. of Missouri-Kansas City Sch. of Med.

10:45 **374.10** C-reactive protein levels and heart transplant outcome. **C.A. Labarrere, G. Campana, G. Boguslawski, M.A. Ortiz, M.J. Sosa, C. Terry, D.E. Pitts, J.A. O'Donnell and D.A. Hormuth.** Clarian Hlth. Partners.

11:00 **374.11** Graft heart rates may grossly indicate development of immunotolerance induced by isolated vascularized bone marrow transplantation. **D.R. Lefebvre, C. Tai, M.S. Matthews, C.R. Gordon, L.F. Strande, S.W. Marra and C.W. Hewitt.** UMDNJ-Robert Wood Johnson Med. Sch., Cooper Univ. Hosp.

375. VASCULAR BIOLOGY: VASCULAR ENDOTHELIAL CELL BIOLOGY

Minisymposium

(*Sponsored by:* NAVBO and ASIP)

TUE. 8:30 AM—CONVENTION CENTER, ROOM 159

CHAIRED: *T. HLA*

COCHAIRED: *A. MALIK*

Vascular Biology

8:30 **375.1** The effects of hypoxia, HIF, and Notch in regulating early hemangioblast development. **D.L. Ramirez-Bergeron, S-Z. Kuang and E. Flores Hernandez.** Children's Hosp. of Philadelphia and Univ. of Pennsylvania .

8:45 **375.2** Retinoic acid regulates the specification and survival of hemogenic endothelium during murine embryogenesis. **L.C. Goldie, J. Lucitti, M.E. Dickinson and K.K. Hirschi.** Baylor Col. of Med.

9:00 **375.3** Essential role of prostacyclin in regenerative function of human endothelial progenitor cells. **T. He, C-F. Lam, L.V. d'Uscio, E.J. Marrotte and Z.S. Katusic.** Mayo Clin.

9:15 **375.4** Endothelial progenitor cell recruitment in rheumatoid arthritis. **M.D. Silverman, C.S. Haas, A.M. Rad, A.S. Arbab and A.E. Koch.** Univ. of Michigan and VA Med. Ctr. and Henry Ford Hlth. Syst.

9:30 **375.5** Octamer-binding protein represses the expression of specific inducible genes involved in inflammatory responses. **N.G. dela Paz, D.W. Rose and T. Collins.** Children's Hosp. Boston and UCSD.

9:45 **375.6** Endothelial phenotype profiles identified in vivo by convergence of differential mRNA and microRNA expression at flow-sensitive athero-susceptible sites in normal swine aortas. **P.F. Davies, C. Shi, E. Manduchi and A.G. Passerini.** Univ. of Pennsylvania and Univ. of California-Davis.

10:00 **375.7** Upregulation of CYP1A1 and CYP1B1 in HUVEC by shear stress mediates downstream gene expression changes. **D.E. Conway, Y. Sakurai, S.G. Eskin and L.V. McIntire.** Georgia Inst. of Technol. and Emory Univ.

10:15 **375.8** Shear stress induces VEGF production mediated by nitric oxide in human adipose tissue mesenchymal stem cells. **V. Bassaneze, A.A. Miyakawa, G. Fatobene, I.T. Schettert and J.E. Krieger.** InCor, Univ. of São Paulo.

10:30 **375.9** Transplantation of bone marrow-derived endothelial progenitor cells prevents increased lung vascular permeability and edema in LPS-induced lung injury. **Y.D. Zhao, H. Ohkawara, Y. Zhao, S.M. Vogel and A.B. Malik.** Univ. of Illinois at Chicago.

10:45 **375.10** Fibroblast growth factor system regulates vascular integrity and endothelial permeability. **M. Murakami, L.T. Nguyen, Z.W. Zhuang, K.L. Moodie, R.V. Stan and M. Simons.** Dartmouth Med. Sch.

11:00 **375.11** The cerebral cavernous malformation1 gene product, KRIT-1, is a Rap1 effector that regulates endothelial cell-cell junctions. **A. Glading, J. Han, R. Stockton and M.H. Ginsberg.** UCSD.

11:15 **375.12** Junctional adhesion molecule-C regulates endothelial permeability by modulating VE-cadherin-mediated interendothelial contacts. **V. Orlova, M. Economopoulou, F. Lupu, S. Santoso and T. Chavakis.** NCI and NEI, NIH, Oklahoma Med. Res. Fndn. and Univ. of Giessen, Germany.

376. SCIENTIFIC SLEUTHING OF HUMAN DISEASE FOR HIGH SCHOOL TEACHERS

Special Session

(*Sponsored by:* ASIP Education Committee and The Intersociety Council for Pathology Information (ICPI))

TUE. 9:00 AM—RENAISSANCE HOTEL, RENAISSANCE WEST B

CHAIRED: *M.C. COHEN*

9:00 Check-in.

9:30 Introduction: what is pathology and why it should be included in your curriculum. **M.C. Cohen.** UMDNJ-New Jersey Med. Sch.

9:45 Atherosclerosis exposed: the complex pathway to a lethal outcome. **A.I. Gotlieb.** Univ. of Toronto Fac. of Med.

10:30 Discussion.

11:00 Cockroach allergen-induced asthma. **D.G. Remick.** Boston Univ. Sch. of Med.

11:45 The cybersleuth's guide to understanding human disease: Internet resources for pathology. **K. Gardner.** NCI, NIH.

12:15 Discussion.

12:45 Tour the exhibits!

LAST DAY TO VISIT EXHIBITS

Tuesday, May 1
9:00 AM – 3:30 PM

377. VASCULAR DEVELOPMENT, GROWTH AND ADAPTATIONS MINI-MEETING: VASCULOGENESIS, ANGIOGENESIS AND ARTERIOGENESIS

Platform

(*Sponsored by:* AAA and NAVBO)

TUE. 10:30 AM—CONVENTION CENTER, ROOM 103A

CHAIRED: *R. TORRY*

Vascular Biology

See Session 318 on page 82 for session details.

378. UNDERSTANDING THE FEDERAL BUDGET PROCESS: SECRETS TO SCIENCE POLICY REVEALED!

Public Affairs Workshop

TUE. 12:00 PM—CONVENTION CENTER, ROOM 144A/B

Public Policy Session

Influencing science policy in the U.S. is a challenge for even the most seasoned scientist or government affairs officer. Kei Koizumi, Director of R&D Budget and Policy at AAAS, will masterfully (and quickly) provide an overview of how science policy is made in Washington by explaining the Federal budgetary process, 30-year trends in Federal funding for research and development, and prognostications on the impact to science of the newly-released 2008 Presidential budget recommendations. If science policy and Federal funding concern you, you won't want to miss this session!

379. NOVEL THERAPIES BASED ON MOLECULES OF THE INNATE IMMUNE SYSTEM

Symposium

TUE. 2:00 PM—CONVENTION CENTER, ROOM 144A/B

CHAIRED: *H.A. PEREIRA AND G.L. STAHL*

Inflammation

2:00 Terminal complement inhibition as a treatment for the rare hemolytic disease, paroxysmal nocturnal hemoglobinuria. **R.P. Rother.** Alexion Pharmaceuticals Inc.

2:45 Innate immune responses in acute brain injury and neurodegeneration: roles of IL-1 and prostaglandins. **M.K. O'Banion.** Univ. of Rochester Med. Ctr.

3:30 Selectins and their glycan-based ligands in innate immunity. **R.D. Cummings.** Emory Univ. Sch. of Med.

4:15 Our continued evolution of the antimicrobial peptide. **T. Falla.** Helix BioMedix Inc., Bothell, WA.

380. PHARMACOGENOMICS AND TARGETED THERAPIES

Symposium

TUE. 2:00 PM—CONVENTION CENTER, ROOM 140A

CHAIRED: *R.B. WEST AND G.J. TSONGALIS*

2:00 Introduction. **G.J. Tsongalis.** Dartmouth Med. Sch.

2:15 Epidermal growth factor receptor as a target in human cancer. **S. Cohen.** UMDNJ-New Jersey Med. Sch.

3:00 Karyotypic complexity and screening of potential anticancer compounds. **I.R. Kirsch.** Amgen Inc.

3:45 Targeted therapies in clinical oncology: trials and tribulations. **L.D. Lewis.** Dartmouth-Hitchcock Med. Ctr.

381. HEPATOBILIARY PATHOBIOLOGY II: LIVER INJURY AND REGENERATION

Minisymposium

TUE. 2:00 PM—CONVENTION CENTER, ROOM 149A

CHAIRED: *G.K. MICHALOPOULOS*

COCHAIRED: *W.B. COLEMAN*

Liver Pathology

2:00 **381.1** Abnormal gene expression patterns in regenerating liver of rats treated with c-met silencing constructs. **S. Paranjpe, W.C. Bowen, J. Luo, K. Nejak-Bowen and G.K. Michalopoulos.** Univ. of Pittsburgh.

2:15 **381.2** Liver regeneration after carbon tetrachloride injury in retrorsine-exposed rats. **D.H. Best and W.B. Coleman.** Univ. of North Carolina Sch. of Med.

2:30 **381.3** Ethanol-impaired liver regeneration is associated with increased oxidative stress and DNA damage in hepatocytes. **R. Chaudhry, K. Duan, M. Pang, J. Wands and S. de la Monte.** Brown Univ.

2:45 **381.4** Liver-specific beta-catenin knockout mice show increased liver injury in the methionine-choline-deficient diet model of steatohepatitis. **J. Behari, B.W. Cieply, W. Otruba, U. Apte, T. Wu and S.P.S. Monga.** Univ. of Pittsburgh.

3:00 **381.5** Bid-independent mitochondria activation in TNFalpha-induced apoptosis and liver injury. **H-M. Ni, X. Chen, W. Ding, W. Gao and X-M. Yin.** Univ. of Pittsburgh Sch. of Med.

3:15 **381.6** Smad3 promotes hepatocellular apoptosis and hepatic fibrogenesis following chronic cholestasis. **I.N. Hines, M. Kremer, A.W. Perry and M.D. Wheeler.** Univ. of North Carolina at Chapel Hill.

3:30 **381.7** Retinoids prevent superoxide-induced apoptosis of rat hepatic stellate cells. **C. Thirunavukkarasu, N. Jameel, T. Wu and C.R. Gandhi.** Univ. of Pittsburgh.

3:45 **381.8** IL-4 promotes experimental drug-induced hepatitis and modulates IP-10 production. **D.B. Njoku, J.L. Mellerson, R. Sharma, M.V. Talor, D. Ligons, Z. Li and N.R. Rose.** Johns Hopkins Univ.

4:00 **381.9** Hepatic iron potentiates acetaminophen (APAP)-induced mitochondrial permeability transition and hepatotoxicity. **M.S. Moon, S. Stoehr, E. McDevitt and H. Isom.** Penn State Col. of Med.

4:15 **381.10** Acetaminophen induces a reversible switch from rough to smooth endoplasmatic reticulum and leads to glycogen degradation in human hepatocytes. **A. Ullrich, D. Beer Stolz, E.C. Ellis, S.C. Strom, G.K. Michalopoulos, C. Berg, J.G. Hengstler and D. Runge.** PRIMACYT Cell Culture Technol. GmbH, Schwerin, Germany, Univ. of Pittsburgh and Univ. of Leipzig, Germany.

4:30 **381.11** Increased expression of cannabinoid receptor 1 in liver cirrhosis associated with *Schistosoma* infection. **X. Gao, Y. Guo, H-Y. Liu and W-X. Tang.** Tongji Med. Col., Huazhong Univ. of Sci. and Technol., People's Republic of China.

4:45 **381.12** The pathogenesis of Mallory body formation in ASH and NASH: the role of oxidative stress. **S.W. French, F. Bardag-Gorce, B.A. French, J. Li, F. Amidi and J. Dedes.** LA BioMed at Harbor-UCLA Med. Ctr.

382. REGULATION OF EPITHELIAL BARRIER AND RESTITUTION IN HEALTH AND DISEASE

Minisymposium

TUE. 2:00 PM—CONVENTION CENTER, ROOM 149B

CHAIRED: *A. BURET*

COCHAIRED: *M. KOVAL*

Epithelial Cell Biology

2:00 **382.1** Claudins influence the number of small paracellular pores. **J.M. Anderson, J. Holmes, A. Bridges, J. Gookin, M. Coccaro and C.M. Van Itallie.** Univ. of North Carolina at Chapel Hill, Sch. of Med., Sch. of Pharm. and Col. of Vet. Med.

2:15 **382.2** Roles for both extracellular loop domains in regulating heterotypic claudin compatibility. **M. Koval, B.L. Daugherty, T. Smith, C. Ward and J.D. Ritzenthaler.** Emory Univ.

2:30 **382.3** Mitogen-activated protein kinases pathways regulate subcellular localization of claudins -6, -7 and -9 in transfected LLC-PK1 cells. **V.E. Zavala-Zendejas, C. Castañeda-Patlán and E.P. Rendón-Huerta.** UNAM, Mexico City.

2:45 **382.4** Clathrin-coated pit endocytosis and Rho kinase mediate *Helicobacter pylori*-induced claudin-4 disruption in human gastric epithelial cells. **T.K. Lapointe, P.M. O'Connor, T.D. Feener, D. Menard and A.G. Buret.** Univeristy of Calgary and Univ. of Sherbrooke, Canada.

3:00 **382.5** Increased epithelial permeability due to enteropathogenic *E. coli* is Rho kinase-dependent and caspase-independent. **A.N. Flynn and A.G. Buret.** Univ. of Calgary, Canada.

3:15 **382.6** Lymphostatin regulates epithelial barrier function. **J-M.A. Klapproth, M. Sasaki, A. Nusrat and B. Babbin.** Emory Univ.

3:30 **382.7** Serine proteases decrease intestinal epithelial permeability by a PKCζ-mediated mechanism. **V. Swystun and W. MacNaughton.** Univ. of Calgary, Canada.

3:45 **382.8** Dimerization of junctional adhesion molecule-A regulates cell migration through prevention of β1 integrin proteosomal degradation. **E. Severson, L. Jiang, A. Ivanov, K. Mandell, A. Nusrat and C.A. Parkos.** Emory Univ.

4:00 **382.9** FPR-1 activation increases intestinal epithelial cell restitution through PI3K-dependent activation of Rho GTPases. **B.A. Babbin, A. Ivanov, A.J. Jesiatis, C.A. Parkos and A. Nusrat.** Emory Univ. and Montana State Univ.

4:15 **382.10** A role of desmoglein 2 in intestinal epithelial apoptosis. **P. Nava, A.N. Hopkins, M.G. Laukoetter, K.J. Green, C.A. Parkos and A. Nusrat.** Emory Univ.

383. VASCULAR BIOLOGY: PROTEASES AND EXTRACELLULAR MATRIX

Minisymposium

(*Sponsored by:* NAVBO and ASIP)

TUE. 2:00 PM—CONVENTION CENTER, ROOM 144C

CHAIRED: *M.P. BENDECK*

COCHAIRED: *M.G. DAVIES*

Vascular Biology

2:00 **383.1** Mechanisms of urokinase mediated activation of the mammalian target of rapamycin. **M.G. Davies, E. Roztocil and S. Nicholl.** Univ. of Rochester.

2:15 **383.2** Regulation of thrombin-stimulated sustained activation of the JNK network in human endothelial cells. **M.J. Woolkalis.** Thomas Jefferson Univ.

2:30 **383.3** **Withdrawn.**

2:45 **383.4** RhoA inhibition activates MMP-2 via a PI3K-dependent mechanism. **E. Ispanovic and T.L. Haas.** York Univ., Canada.

3:00 **383.5** Activation of matrix metalloproteinase-3 and expression of angiostatin play an important role in angiogenesis in diabetics with peripheral vascular occlusive disease. **R. Hasanadka, J.P. Hart, D. Weihrauch, K.R. Brown, B.D. Lewis, G.R. Seabrook and D.C. Warltier.** Med. Col. of Wisconsin and Univ. of Rochester.

3:15 **383.6** Matrix metaloproteinases are necessary for flow-induced arterial remodeling. **M. Goel, H. Jiang, M.R. DiStasi and Z.S. Galis.** Indiana Univ. Sch. of Med.

3:30 **383.7** ADAM17 mediates endothelial invasion in three-dimensional collagen matrices. **K.J. Bayless, H-I. Kwak, E.A. Mendoza and S.A. Maxwell.** Texas A&M Univ. Syst. Hlth. Sci. Ctr.

3:45 **383.8** Cleaved kininogen inhibits capillary tube formation by circulating endothelial cells via inhibiting matrix metalloprotease-2. **Y. Wu, N. Schmuckler, R. Hebbel and R. Colman.** Temple Univ. Sch. of Med. and Univ. of Minnesota, Minneapolis.

4:00 **383.9** Distribution of the tissue plasminogen activator promotor to perivascular sympathetic nerves and other neural crest derivatives: evidence of a dispersed plasmin proteolysis. **J. O'Rourke, Z. Hao, C. Guo and R.E. Cone.** Univ. of Connecticut Hlth. Ctr.

4:15 **383.10** Characterisation of endothelin converting enzyme-1 shedding from endothelial cells. **S. Kuruppu, S. Reeve and I. Smith.** Monash Univ., Australia.

4:30 **383.11** Endothelial anticoagulant heparan sulfate mediates anti-inflammatory effects of antithrombin. **N.W. Shworak, B.A. Esposito, S. Hajmohammadi and P.L. Gross.** Dartmouth Med. Sch. and Univ. of Toronto.

4:45 **383.12** Major gD-type 3-*O*-sulfotransferases make anticoagulant heparan sulfate. **N.W. Shworak, R. Lawrence, J.D. Esko and S. Hajmohammadi.** Dartmouth Med. Sch. and UCSD.

384. NAVBO MEMBERSHIP BUSINESS MEETING

Business Meeting

TUE. 2:00 PM—CONVENTION CENTER, ROOM 159

CHAIRED: *L. IRUELA-ARISPE*

Vascular Biology

385. NAVBO SYMPOSIUM: HEREDITARY VASCULAR DISORDERS: FROM CLONING TO PATHOLOGY

Symposium

(Supported by an educational grant from Angioma Alliance)

(Cosponsored by: the Hereditary Hemorrhagic Telangiectasia Foundation)

TUE. 2:30 PM—CONVENTION CENTER, ROOM 159

CHAIRED: *D.A. MARCHUK AND B.S. JACOBSON*

Vascular Biology

2:30 In vivo dissection of TGF-beta pathway in the pathogenesis of hereditary hemorrhagic telangiectasia. **S.P. Oh.** Univ. of Florida.

3:00 Molecular genetics of primary pulmonary hypertension. **R.C. Trembath.** Univ. of Leicester.

3:30 The neurovascular connection: cerebral cavernous malformations. **D.A. Marchuk.** Duke Univ. Med. Ctr.

4:00 RASA1 causes both slow and fast flow lesions. **M. Vikkula.** Christian de Duve Inst. and Catholic Univ. of Louvain.

386. NAVBO SYMPOSIUM: VASCULAR SMOOTH MUSCLE CELL HETEROGENEITY AND SIGNALING

Symposium

TUE. 2:30 PM—CONVENTION CENTER, ROOM 103A

CHAIRED: *G. GABBIANI AND G.K. OWENS*

Vascular Biology

2:30 Developmental origins of smooth muscle diversity. **M.W. Majesky.** Univ. of North Carolina at Chapel Hill.

3:00 Smooth muscle cell heterogeneity in porcine coronary artery: implications for atherosclerosis and restenosis. **M-L. Bochaton-Piallat.** CMU, Univ. of Geneva.

3:30 Primary contributors to vascular remodeling: permanent residents or legal immigrants? **M. Frid.** Univ. of Colorado Hlth. Sci. Ctr.

4:00 Transcriptional programs regulating heart and vascular development. **M.S. Parmacek.** Univ. of Pensylvania Hlth. Syst.

Pharmacology

387. REGULATION OF DRUG METABOLIZING ENZYMES AND TRANSPORTERS IN INFLAMMATORY DISEASE STATES: A SYMPOSIUM IN HONOR OF THE CAREER OF DR. KENNETH W. RENTON

Symposium

(*Sponsored by:* The Division for Drug Metabolism; the Division for Clinical Pharmacology, Pharmacogenomics, and Translational Medicine; the Division for Drug Discovery, Development and Regulatory Affairs; the Division for Systems and Integrative Pharmacology; and the Division for Toxicology)

TUE. 9:30 AM—CONVENTION CENTER, ROOM 140B

CHAIRED: *E.T. MORGAN*

9:30 Overview and tribute to the contributions of Dr. Kenneth W. Renton. **E.T. Morgan.** Emory Univ.

9:35 Inflammation and infection: hazards for drug safety. **K.W. Renton.** Dalhousie Univ.

10:00 Discussion.

10:05 Regulation of cytochrome P450 and UGT enzymes in live and sterile models of infection. **E.T. Morgan.** Emory Univ.

10:25 Discussion.

10:30 Regulation of drug transporters in inflammation. **M. Piquette-Miller.** Univ. of Toronto.

10:55 Discussion.

11:00 Repression of CYP3A4 by inflammation associated with cancer. **G. Robertson.** Univ. of Sydney.

11:25 Discussion.

11:30 Regulation of CYP3A metabolism and P-glycoprotein-mediated drug transport during CNS inflammation. **K.B. Goralski.** Dalhousie Univ. Col. of Pharm., Canada.

11:55 Discussion.

388. MOLECULAR MECHANISMS OF CHEMICAL TERATOGENESIS

Symposium

(*Sponsored by:* The Division for Toxicology and the Division for Drug Metabolism)

TUE. 9:30 AM—CONVENTION CENTER, ROOM 141

CHAIRED: *P.G. WELLS*

Developmental Pharmacology

9:30 Chair's introduction.
9:35 Oxidative DNA damage and repair in teratogenesis. **P.G. Wells.** Univ. of Toronto.
10:05 Discussion.
10:10 Oxidative stress and signal transduction in teratogenesis. **J. Hansen.** Emory Univ. Sch. of Med.
10:40 Discussion.
10:45 Oxidative stress in diabetic teratogenesis. **M.R. Loeken.** Harvard Univ.
11:15 Discussion.
11:20 Neonatal apoptotic mechanisms of neurodevelopmental deficits. **J.W. Olney.** Washington Univ. Sch. of Med.
11:50 Discussion.

389. DIVISION FOR CLINICAL PHARMACOLOGY, PHARMACOGENOMICS AND TRANSLATIONAL MEDICINE PROGRAMMING: THE REGULATORY APPROACH TO PHARMACOGENOMICS: AN INTERNATIONAL PERSPECTIVE

Symposium

TUE. 9:30 AM—CONVENTION CENTER, ROOM 142

CHAIRED: *L.J. LESKO*

COCHAIRED: *F.W. FRUEH*

Pharmacogenomics

9:30 U.S. FDA regulatory approaches to pharmacogenomics. **F.W. Frueh.** FDA, Silver Spring, MD.
9:55 A framework for pipeline efficacy pharmacogenetics. **A.D. Roses.** GlaxoSmithKline Inc.
10:20 Development of devices for pharmacogenomic testing. **J.A. Warrington.** Affymetrix Inc.
10:45 Drug-test co-development: a real-life perspective. **J.R. Gulcher.** deCODE Genetics Inc., Iceland.
11:10 **Panel Discussion:** From science to regulation to medical practice: the challenge of implementation. **L.J. Lesko.** FDA, Silver Spring, MD and **W.A. Rosenkrans.** AstraZeneca Pharmaceut. and Personalized Med. Coalition, Washington, DC.
12:00 Division for Clinical Pharmacology, Pharmacogenomics, and Translational Medicine Business and Executive Committee Meeting.

390. IMPACT OF PHARMACOGENOMICS ON THE TREATMENT OF NEUROPSYCHIATRIC DISORDERS: FROM DRUG TARGET TO TARGETED THERAPY

Symposium

(*Sponsored by:* The Division for Drug Discovery, Development and Regulatory Affairs; the Division for Neuropharmacology; the Division for Behavioral Pharmacology; the Division for Clinical Pharmacology, Pharmacogenomics, and Translational Medicine; and the Division for Systems and Integrative Pharmacology)

TUE. 9:30 AM—CONVENTION CENTER, ROOM 143A/B

CHAIRED: *L.K. NISENBAUM*

Pharmacogenomics

9:30 Chair's introduction.
9:35 Genetic variants associated with neuropsyciatric disease susceptibility. **D. Goldman.** NIAAA, NIH.
10:05 Discussion.
10:10 Current applications of pharmacogenetic testing in antidepressants and antipsychotic treatment: focusing on CYP2D6 and CY2C19. **J. De Leon.** Univ. of Kentucky.
10:40 Discussion.
10:45 Genetic variation and response to antidepressants. **R.H. Perlis.** Harvard Med. Sch.
11:15 Discussion.
11:20 From genome scan to functional biology for antipsychotic-induced weight gain. **L.K. Nisenbaum.** Eli Lilly and Co.
11:50 Discussion.

391. DIVISION FOR DRUG METABOLISM EARLY CAREER ACHIEVEMENT AWARD LECTURE

TUE. 2:00 PM—CONVENTION CENTER, ROOM 143C

CHAIRED: *L.S. KAMINSKY*

COCHAIRED: *K.E. THUMMEL*

2:00 Introduction. **L.S. Kaminsky.** New York State Dept. of Hlth.
2:10 Xenobiotic-activated receptors: from transcription, to drug metabolism, to disease. **Q. Ma.** NIOSH, CDC.

No Smoking

In Session Rooms, Poster or Exhibit Area

392. DIVISION FOR DRUG METABOLISM PLATFORM SESSION: BIOTRANSFORMATION AND DRUG TRANSPORT

Oral

TUE. 3:00 PM—CONVENTION CENTER, ROOM 143C

CHAIRED: *L.S. KAMINSKY*

COCHAIRED: *K.E.THUMMEL*

James R. Gillette Best Paper Awards and Selected Contributed Abstract Presentations:

3:00 Chair's introduction.
3:05 **392.1** Rifampicin induction of CYP3A4 requires PXR cross talk with HNF4α and co-activators, and suppression of SHP gene expression. **T . Li and J.Y.L. Chiang.** Northeastern Ohio Univs. Col. of Med.
3:25 Discussion.
3:30 **392.2** Functional analysis of the human N-acetyltransferase 1 major promoter: quantitation of tissue expression and identification of critical sequence elements. **A. Husain, D.F. Barker, X. Zhang, M.A. Doll, J.C. States and D.W. Hein.** Univ. of Louisville Sch. of Med.
3:40 Discussion.
3:45 **392.3** Mechanisms of cytokine-mediated, posttranscriptional CYP3Aa1 downregulation in primary rat hepatocytes. **C-M. Lee and E.T. Morgan.** Emory Univ.
3:55 Discussion.
4:00 **392.4** Glucocorticoids enhance aryl hydrocarbon receptor expression and function in mouse hepatoma cells. **D.S. Riddick, K.A. Bielefeld and C. Lee.** Univ. of Toronto.
4:10 Discussion.
4:15 Break.
4:20 **392.5** Mutational analysis of polar amino acid residues within predicted transmembrane helices of multidrug resistance protein 1 (ABCC1): effect on substrate specificity. **D-W. Zhang, S.P.C. Cole and R.G. Deeley.** Univ. of Texas Southwestern Med. Ctr. and Queen's Univ., Canada.
4:40 Discussion.
4:45 **392.6** Association of the cytochrome P450 *1A2*1F* polymorphism with clozapine response in schizophrenic patients. **U. Yasar, M.O. Babaoglu, H. Balibey, M. Cetin, S. Lundgren, A. Rane and A. Bozkurt.** Hacettepe Univ. Fac. of Med., Turkey, GATA, Istanburl and Karolinska Inst., Huddinge.
4:55 Discussion.
5:00 **392.7** CYP 2C19 is primarily responsible for methemoglobin toxicity of dapsone. **S. Ganesan, B. Tekwani and L. Walker.** Univ. of Mississippi.
5:10 Discussion.
5:15 **392.8** Conserved positively charged amino acid residues in the putative binding pocket are important for OATP1B1 function. **Y. Miao and B. Hagenbuch.** Univ. of Kansas Med. Ctr.
5:25 Discussion.

393. DIVISION FOR NEUROPHARMACOLOGY POSTDOCTORAL SCIENTIST AWARD FINALISTS

Oral

TUE. 3:00 PM—CONVENTION CENTER, ROOM 140B

CHAIRED: *S.G. AMARA*

3:00 Neurotransmitter transporters: a dance of domains and substrates. **S.G. Amara.** Univ. of Pittsburgh Sch. of Med.

Postdoctoral Scientist Award Presentations:
3:25 Reciprocal modulation of function between the D1 and D2 dopamine receptors and the Na^+/K^+-ATPase, a novel member of the dopamine receptor signalplex. **L.A. Hazelwood.** NINDS, NIH.
3:50 Enhancement of endogenous cannabinoid responses through FAAH inhibition provides cellular and functional protection against excitotoxic brain damage. **D.A. Karanian.** Univ. of Connecticut.
4:15 Distinct roles of spinal muscarinic receptor subtypes in control of glycinergic input revealed by muscarinic receptor knockout mice. **H-M. Zhang.** Univ. of Texas, Houston.
4:40 Alteration in acetylcholinesterase glycosylation of rat brain in memory disorder. **A. Das.** Mayo Clin. Col. of Med.
5:05 Impaired HPA axis and their feedback regulation in SERT knockout mice. **X. Jiang.** Univ. of Texas Med. Branch.

394. DIVISION FOR MOLECULAR PHARMACOLOGY PROGRAMMING: POSTDOCTORAL AWARD FINALISTS

Oral

TUE. 3:00 PM—HYATT HOTEL, CONSTITUTION C

CHAIRED: *S.M. LANIER*

3:00 Along the continuum of G-protein signaling with additional thoughts on CQ and PQ relative to the art of science. **S.M. Lanier.** Med. Univ. of South Carolina.

Postdoctoral Scientist Award Presentations:
3:30 The retinoic acid receptor-related orphan receptor regulates human CYP2C8. **Y. Chen.** NIEHS, NIH, Research Triangle Park (Advisor: J.A. Goldstein).
3:50 Discussion.
3:55 Cellular models of altered base excision repair reveal a differential contribution of reactive oxygen species-induced 7,8-dihydro-8-oxo-2'-deoxyguanosine to the cytotoxic mechanisms of platinum anticancer drugs cisplatin and oxaliplatin. **T.J. Preston.** Univ. of Toronto Fac. of Pharm. (Advisor: P.G. Wells).
4:15 Discussion.
4:20 Impaired c-src kinase regulation of muscle contraction during colonic inflammation is due to nitrosylation of Ca^{2+} channels. **G.R. Ross.** Virginia Commonwealth Univ. (Advisor: H. Akbarali).
4:40 Discussion.
4:45 Function of caveolin-1 in paclitaxel-mediated cytotoxicity in breast cancer. **A.N. Shajahan.** Georgetown Univ. (Advisor: R. Clarke).
5:05 Discussion.

5:10 Vasoactive intestinal peptide transactivates the androgen receptor through a PKA-dependent extracellular signal-regulated kinase pathway in prostate cancer cells. **Y. Xie.** Creighton Univ. (Advisor: Y. Tu).
5:30 Discussion.

395. DIVISION FOR SYSTEMS AND INTEGRATIVE PHARMACOLOGY PROGRAMMING: REGENERATIVE PHARMACOLOGY: INTEGRATIVE PHARMACOLOGY OF ENGINEERED TISSUES

Symposium

TUE. 3:00 PM—CONVENTION CENTER, ROOM 142

CHAIRED: *G.J. CHRIST*

3:00 Regenerative pharmacology: an overview. **G.J. Christ.** Wake Forest Univ.
3:15 Mechanical and matrix effects on cell phenotype in engineered cardiovascular tissues. **J.P. Stegemann.** Rensselaer Polytech. Inst.
3:40 Discussion.
3:45 Challenges and oportunities in engineering clinically relevant bladder implants: the improtance of pharmacology and phenotype. **T. Bertram.** Tengion, Inc., Winston-Salem.
4:10 Discussion.
4:15 Pharmacology of engineered and regenerating tissues. **K-E. Andersson.** Wake Forest Univ.
4:40 Discussion.
4:45 Cyclic GMP and vascular smooth muscle cell phenotype. **T.M. Lincoln.** Univ. of South Alabama Col. of Med.
5:10 Discussion.

396. MOUSE MEETS MAN: ADVANCED MURINE MODELS FOR USE IN CANCER DRUG DEVELOPMENT

Symposium

(*Sponsored by:* The Division for Drug Discovery, Development and Regulatory Affairs)

TUE. 3:00 PM—CONVENTION CENTER, ROOM 141

CHAIRED: *T.C. STOVER*

COCHAIRED: *D. TUVESON*

Pharmacogenomics

3:00 Introduction. **T.C. Stover.** Swiftwater Group, Philadelphia.
3:05 Genetically engineered mouse models of pancreatic exocrine cancer. **D.A. Tuveson.** Cambridge Res. Inst./ CRUK Cambridge, UK.
3:35 Discussion.
3:40 Pathway-specific biomarkers in mouse models of prostate cancer. **C.L. Sawyers.** Mem. Sloan-Kettering Cancer Ctr.
4:10 Discussion.
4:15 Modeling the role of BRCA1, BRCA2, and Trp53 loss-of-function in breast cancer. **J. Jonkers.** Netherlands Cancer Inst., Amsterdam.
4:45 Discussion.
4:50 Mutant EGFR-dependent lung cancer: lessons from mouse models. **K.A. Politi.** Mem. Sloan-Kettering Cancer Ctr.
5:20 Discussion.

397. MULTIPLE CALCIUM CHANNELS IN THE VASCULATURE: REGULATION OF ARTERIAL TONE

Symposium

(*Sponsored by:* The Division for Cardiovascular Pharmacology and the Division for Molecular Pharmacology)

TUE. 3:00 PM—CONVENTION CENTER, ROOM 143A/B

CHAIRED: *J.E. BRAYDEN*

3:00 Chair's introduction.
3:05 Store-operated channels and vascular tone. **V.M. Bolitina.** Boston Univ. Sch. of Med.
3:35 Discussion.
3:40 Receptor- and stretch-induced activation of calcium entry channels. **D.L. Gill.** Univ. of Maryland Sch. of Med.
4:10 Discussion.
4:15 Calcium sparklets in arterial smooth muscle. **L.F. Santana.** Univ. of Washington Sch. of Med.
4:45 Discussion.
4:50 Mechanisms of Ca^{2+} regulation mediated by TRP channels in vascular smooth muscle. **J.E. Brayden.** Univ. of Vermont Col. of Med.
5:20 Discussion.

Physiology

398. EDWARD F. ADOLPH DISTINGUISHED LECTURESHIP OF THE APS ENVIRONMENTAL AND EXERCISE PHYSIOLOGY SECTION

TUE. 9:00 AM—CONVENTION CENTER, ROOM 146A

Speaker: **J.A. Boulant.** Ohio State Univ. Col. of Med.

Title: Hypothalamic Neurons and the Regulation of Body Temperature

399. CARL W. GOTTSCHALK DISTINGUISHED LECTURESHIP OF THE APS RENAL SECTION

TUE. 10:30 AM—CONVENTION CENTER, ROOM 146B

Speaker: **C. Baylis.** Univ. of Florida.

Title: Nitric Oxide Deficiency in Renal Disease

400. ERNEST H. STARLING DISTINGUISHED LECTURESHIP OF THE APS WATER & ELECTROLYTE HOMEOSTASIS SECTION

TUE. 2:00 PM—CONVENTION CENTER, ROOM 146B

Speaker: **P. Jose.** Georgetown Univ., Children's Med. Ctr.

Title: Salt Sensitive Hypertension: A Problem of Communication

401. WALTER C. RANDALL LECTURE IN BIOMEDICAL ETHICS: THE DARK SIDE

(Supported by an educational grant from Taylor Univ.)

TUE. 2:00 PM—CONVENTION CENTER, ROOM 145A

Public Policy Session

Education Session

2:00 Research misconduct: how to avoid, prevent, detect and report. **S.L. Titus.** U.S. Dept. of Hlth. and Human Svcs.

2:30 Motives, ethics, and responsibility in research. **D. Prentice.** Family Res. Council, Washington, DC.

402. HORACE W. DAVENPORT DISTINGUISHED LECTURESHIP OF THE APS GASTROINTESTINAL AND LIVER PHYSIOLOGY SECTION

TUE. 3:15 PM—CONVENTION CENTER, ROOM 146B

Speaker: **M. Donowitz.** Johns Hopkins Univ.

Title: NHE3 and Its Signaling Complexes: How a Transporter Is Regulated

403. *INTEGRATIVE BIOLOGY* AT THE START OF THE 21ST CENTURY: THE VIEW FROM NSF

Special Session

(*Sponsored by:* National Science Foundation and the APS Comparative and Evolutionary Physiology Section)

TUE. 2:00 PM—CONVENTION CENTER, BALLROOM B

Education Session

Speaker: **J. Collins.** NSF.

Title: Integrative Biology at the Start of the 21st Century: The View from NSF

404. APS BUSINESS MEETING

TUE. 5:45 PM—CONVENTION CENTER, BALLROOM B

405. DRUG DISCOVERY EFFORTS FOR PAIN INDICATIONS: ION CHANNELS AND GPCRS

Symposium

(*Sponsored by:* APS Translational Physiology Group and Liaison with Industry Committee)

TUE. 8:00 AM—CONVENTION CENTER, ROOM 146C

CHAIRED: *M. FINLEY AND W. MARTIN*

Translational Physiology

8:00 Therapeutic opportunities in endocannabinoid transport inhibition. **C. Felder.** Eli Lilly and Co.

8:30 Peripheral nerve sodium channel blockers as analgesics: efficacy and functional selectivity. **B. Priest.** Merck & Co.

9:00 TRPM8: a novel pain target comes in from the cold. **C. Flores.** Johnson & Johnson Pharmaceuticals R&D.

9:30 Sensing the pain of a heart attack. **E. McCleskey.** Oregon Hlth. & Sci. Univ.

LAST DAY TO VISIT EXHIBITS

Tuesday, May 1

9:00 AM – 3:30 PM

406. MULTIPLE CAREER PATHS FOR A PHYSIOLOGIST: UNDERSTAND YOUR OPTIONS AND HOW TO GET THERE

Symposium

(*Sponsored by:* APS Trainee Advisory Committee)

TUE. 8:00 AM—CONVENTION CENTER, ROOM 147B

CHAIRED: *J. PLUZNICK AND E.A. WEHRWEIN*

Career Session

8:00 Welcome/opening remarks.
8:05 Perspectives from a small undergraduate college. **M. Anderson.** Smith Col.
8:25 Opportunities in industry: small pharmaceutical/ biotechnology company. **J. Lameh.** ACADIA Pharmaceuticals.
8:45 Perspectives from a U.S. government scientist. **E.J. Zambraski.** U.S. Army Res. Inst. of Envrn. Med., Natick, MA.
9:05 Insight into a career in scientific writing. **K. Poi.** Eli Lilly and Co.
9:25 Break-out session: individual Q & A with speakers.

407. NEURAL PLASTICITY OF THE HYPOXIC REFLEX: CAROTID BODIES, NTS AND PONS

Symposium

(*Sponsored by:* APS Respiration Section)

TUE. 8:00 AM—CONVENTION CENTER, ROOM 147A

CHAIRED: *C-S. POON AND D.D. KLINE*

Oxidative Stress/Hypoxia

8:00 Hypoxic neuronal sensitivity: roles of neurosteroids and hypoxia-inducing factor. **M-P. Morin-Surun.** CNRS, Gif sur Yvette.
8:30 Plasticity of the hypoxic reflex pathway: from carotid bodies to NTS. **D.D. Kline.** Univ. of Missouri-Columbia.
9:00 Neuro-humoral adaptations to sustained and intermittent hypoxia. **S.W. Mifflin.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio.
9:30 Neural basis of nonassociative learning in NTS and pons. **C-S. Poon.** MIT.

No Smoking
In Session Rooms, Poster or Exhibit Area

408. NEUROIMMUNO INTERACTIONS

Symposium

(*Sponsored by:* The Association of Latin American Physiological Societies)

TUE. 8:00 AM—CONVENTION CENTER, ROOM 145A

CHAIRED: *V. RETTORI AND J. ANTUNES-RODRIGUES*

8:00 Molecular transduction mechanisms of cytokine/ hormones interactions. **E. Arzt.** Univ. of Buenos Aires.
8:30 Neuroendocrine control of T cell development: role of growth hormone. **W. Savino.** Inst. Oswaldo Cruz, Rio de Janeiro.
9:00 Effects of physical and psychological stress on innate immunity and tumor growth. **J. Palermo Neto.** Univ. of São Paulo.
9:30 Pharmacogenomics of neuroimmuno interactions in psychiatric disorders. **J. Licinio.** Univ. of Miami, Jackson Mem. Med. Ctr.

409. COMPARATIVE GENOMICS: LINKING NONCODING DNA TO BIOLOGY AND DISEASE

Symposium

(*Sponsored by:* APS Physiological Genomics Group)

TUE. 10:30 AM—CONVENTION CENTER, ROOM 146A

CHAIRED: *M.A. NOBREGA*

10:30 TBA. **M. Nobrega.** Univ. of Chicago.
11:00 TBA. **A. McCallion.** Johns Hopkins Univ. Sch. of Med.
11:30 The genomic code of tissue-specific enhancers. **I. Ovcharenko.** Lawrence Livermore Natl. Lab.
12:00 A neurodevelopmental RNA gene includes the most evolutionarily accelerated segment in the human genome. **S. Salama.** Univ. of California-Santa Cruz.

410. EPITHELIAL DEVELOPMENT, DISEASE, AND REGENERATION

Symposium

(*Sponsored by:* APS Epithelial Transport Group)

TUE. 10:30 AM—CONVENTION CENTER, ROOM 145B

CHAIRED: *C.R. SUSSMAN*

10:30 Zebrafish as a model of kidney development and disease. **I.A. Drummond.** Massachusetts Gen. Hosp.
11:00 From stem cells to organs with GATA transcription factors. **T. Evans.** Albert Einstein Col. of Med.
11:30 Bioelectrical control of embryonic development and regeneration. **M. Levin.** Harvard Med. Sch.
12:00 Organogenesis of kidney and endocrine pancreas: growing new organs in situ. **M.R. Hammerman.** Washington Univ. Sch. of Med.

411. THE SLC26 TRANSPORTER FAMILY AND EPITHELIAL FUNCTION

Symposium

TUE. 10:30 AM—CONVENTION CENTER, BALLROOM B

CHAIRED: *M.A. GRAY*

Transporters

10:30 Introduction: SLC26 transporters. **M. Gray.** Med. Sch., Univ. of Newcastle upon Tyne.
10:40 Function and regulation of SLC26 transporters in anion secretion and salt absorption in the native intestine. **U. Seidler.** Hannover Med. Sch.
11:05 SLC26 transporters: CFTR and pancreatic HCO_3^-. **S. Muallem.** Univ. of Texas Southwestern Med. Ctr.
11:30 SLC26A6-carbonic anhydrase interactions. **J. Casey.** Univ. of Alberta.
11:55 The role of pendrin in the regulation of blood pressure. **S. Wall.** Emory Univ. Sch. of Med.

412. TWO-PORE DOMAIN POTASSIUM CHANNELS: VASCULAR CONTROL BY A NEWLY DISCOVERED CHANNEL FAMILY

Symposium

(*Sponsored by:* APS Cardiovascular Section)

TUE. 10:30 AM—CONVENTION CENTER, ROOM 145A

CHAIRED: *R.M. BRYAN, JR. AND A. WESTON*

Ion Channels

10:30 2P K channels: an overview and their role in neuroprotection. **M. Lazdunski.** CNRS, Sophia Antipolis.
11:05 The regulation of pulmonary artery tone by 2P K channels. **A.M. Gurney.** Univ. of Manchester.
11:30 Effects of pH and pharmacological modulation on vascular tone: a role for 2P K channels. **G. Edwards.** Univ. of Manchester.
11:55 Cerebral artery dilations by 2P K channels. **R.M. Bryan.** Baylor Col. of Med.

413. ULTRAFAST AND ULTRAACTIVE: THE STRANGE LIFE OF THE EXTRAOCULAR MUSCLES

Symposium

(*Sponsored by:* APS Muscle Biology Group)

TUE. 10:30 AM—CONVENTION CENTER, ROOM 147A

CHAIRED: *F.H. ANDRADE*

10:30 Dynamic cell biology of the extraocular muscles. **L.K. McLoon.** Univ. of Minnesota.
11:00 Always active, always hungry? The metabolic design of the extraocular muscles. **F.H. Andrade.** Univ. of Kentucky.
11:30 Differential involvement of extraocular muscle by neuromuscular disease. **H.J. Kaminski.** Saint Louis Univ.
12:00 Eye muscle motor units: a petite illumination. **S.J. Goldberg.** Virginia Commonwealth Univ.

414. A. CLIFFORD BARGER MEMORIAL SYMPOSIUM: CONTROL MECHANISMS OF RENIN SYNTHESIS AND RELEASE: A 21ST CENTURY PERSPECTIVE

Symposium

(Supported by an educational grant from The William Townsend Porter Foundation)

(*Sponsored by:* APS Water and Electrolyte Homeostasis Section)

TUE. 3:15 PM—CONVENTION CENTER, ROOM 145B

CHAIRED: *P.B. PERSSON AND H. EHMKE*

3:15 Surprises from studies of renin gene regulation in vitro and in vivo. **C.D. Sigmund.** Univ. of Iowa.
3:45 Knockout of mouse renin enhancer shows importance in renin expression in vivo and REKO mouse physiology. **B.J. Morris.** Univ. of Sydney.
4:15 Transcriptional control of renin synthesis. **R. Mrowka.** Humboldt Univ. Berlin.
4:45 Ion channels and renin secretion: the single cell perspective. **O. Skøtt.** Univ. of Southern Denmark.

415. METABOLOMIC APPROACHES TO STUDY CARDIOVASCULAR DISEASE MECHANISMS AND DIAGNOSIS

Symposium

(*Sponsored by:* APS Cardiovascular Section)

TUE. 3:15 PM—CONVENTION CENTER, ROOM 145A

CHAIRED: *C. HARDIN AND C.B. NEWGARD*

Metabolic Abnormalities

3:15 Chair's introduction.
3:20 Metabonomics of statin-induced myopathy: improving usefulness of statins. **C. Hardin.** Univ. of Missouri-Columbia.
3:45 Pathway discovery and metabolic control assessed via metabolomics and isotopomer analysis. **H. Brunengraber.** Case Western Reserve Univ.
4:15 Regulation and disregulation of muscle energy metabolism in health and disease. **D. Beard.** Med. Col. of Wisconsin.
4:45 Metabolomics applied to understanding of overlaps between metabolic syndrome and cardiovascular disease. **C. Newgard.** Duke Univ. Med. Ctr.

No Smoking

In Session Rooms, Poster or Exhibit Area

416. ROLE OF ADIPOSE TISSUE MACROPHAGES IN OBESITY-INDUCED INSULIN RESISTANCE

Symposium

(*Sponsored by:* The American Federation for Medical Research)

TUE. 3:15 PM—CONVENTION CENTER, ROOM 146C

CHAIRED: *M. HAWKINS*

Metabolic Abnormalities

3:15 Role of adipose tissue macrophages in obesity-induced insulin resistance: from serendipity to paradigm shift. **A.W. Ferrante.** Columbia Univ. Col. of P&S.

3:45 Adipose tissue: from lipid storage compartment to endocrine organ. **P.E. Scherer.** Albert Einstein Col. of Med.

4:15 Adipose tissue macrophages contribute to nutrient-induced insulin resistance in humans. **M. Hawkins.** Albert Einstein Col. of Med.

4:45 Ground-breaking new treatments to reduce systemic inflammation and treat diabetes. **S.E. Shoelson.** Joslin Diabetes Ctr., Harvard Med. Sch.

417. INTEGRATED CARDIOVASCULAR PHYSIOLOGY OF METABOLIC SYNDROME AND DIABETES

Featured Topic

(*Sponsored by:* APS Water and Electrolyte Homeostasis and Cardiovascular Sections)

TUE. 8:00 AM—CONVENTION CENTER, ROOM 146B

CHAIRED: *M. BRANDS AND D. BUSIJA*

8:00 Impaired activation of renal sensory nerves in diabetes: role of angiotensin. **U.C. Kopp, M. Cicha and M. Yorek.** VA Med. Ctr. and Univ. of Iowa Carver Col. of Med. **(892.2)**

8:15 HDAC inhibition protects pancreatic beta cells and islets from cytokine-induced cell death by disrupting NF-κB signaling. **P.T. Fueger, H.E. Hohmeier and C.B. Newgard.** Duke Univ. **(737.26)**

8:30 Increased systolic blood pressure and defective pressure-natriuresis in mice lacking the insulin receptor in the thick ascending limb through collecting duct. **S. Tiwari, V.K.M. Halagappa and C.A. Ecelbarger.** Georgetown Univ. **(892.7)**

8:45 Impact of diet-induced obesity and type 2 diabetes on coronary endothelial adhesion molecule expression in mice. **S.B. Bender, R. Malgor and R.E. Klabunde.** Univ. of Missouri-Columbia and Ohio Univ. Col. of Osteo. Med. **(737.29)**

9:00 Renal nerves are required for hypertension at the onset of diabetes in L-NAME treated rats. **R. Biemiller, T. Bell, H. Labazi, V. Springfield and M. Brands.** Med. Col. of Georgia. **(892.8)**

9:15 Growth hormone regulation of neuropeptide Y in the diabetic kidney. **J.L. Rogers, A.R. Mitchell, C. Maric, M.K. Adam, Z. Zukowska and S.E. Mulroney.** Georgetown Univ. **(739.2)**

9:30 WEH Young Investigator Award Lecture. **J.Sullivan.** Med. Col. of Georgia.

418. MOLECULAR PHYSIOLOGY OF CATION-COUPLED BICARBONATE TRANSPORTERS

Featured Topic

(*Sponsored by:* APS Cell and Molecular Physiology Section)

TUE. 8:00 AM—CONVENTION CENTER, ROOM 154B

CHAIRED: *M.O. BEVENSEE AND I.I. GRICHTCHENKO*

Transporters

8:00 Na-coupled HCO_3^- transporters: 10 years of cloning and characterizing function. **W.F. Boron.** Yale Univ. Sch. of Med.

8:30 SLC4 transporters: lessons learned from knockout models, genetic diseases and structural studies. **I. Kurtz.** UCLA.

9:00 Localization of NBCn1 (slc4a7) by a non-immunological method. **E. Boedtkjer, E-M. Füchtbauer, J. Praetorius and C. Aalkjær.** Univ. of Aarhus, Denmark. **(916.7)**

9:15 Role of S-S bond formation in the oligomerization of kNBC1 (NBCe1-A). **P. Sassani, A. Pushkin, N. Abuladze, R. Azimov, L. Kao, J. Peti-Peterdi, W. Liu, D. Newman and I. Kurtz.** UCLA and USC. **(916.3)**

9:30 The glutamate substitution of aspartate555 of the electrogenic sodium/bicarbonate cotransporter NBCe1 alters bicarbonate selectivity. **I. Choi.** Emory Univ. **(916.5)**

9:45 IRBIT functionally enhances the electroneutral Na^+-coupled bicarbonate transporter NCBE by sequestering an N-terminal autoinhibitory domain. **M.D. Parker, C. Daly, L-A. Skelton and W. Boron.** Yale Univ. Med. Sch. **(916.15)**

419. NEW INSIGHTS ON ADAPTATIONS TO ENVIRONMENTAL AND METABOLIC STRESS FROM GENOMICS AND PROTEOMIC STUDIES

Featured Topic

(*Sponsored by:* APS Comparative and Evolutionary Physiology Section)

TUE. 8:00 AM—CONVENTION CENTER, ROOM 155

CHAIRED: *S. KIRCHNER AND R. FERRARIS*

8:00 Post-genomic screening and pattern analysis approaches to environmental stress adaptation. **A.R. Cossins.** Univ. of Liverpool.

8:45 Translational control of hypoxia-sensitive genes by nucleolin. **M. Fähling, R. Mrowka, A. Steege, P. Martinka, A. Perlewitz, P.B. Persson and B.J. Thiele.** Charité, Med. Univ. Berlin. **(966.1)**

9:00 Suppression of reactive oxygen species production in the anoxia-tolerant turtle *Trachemys scripta*. **S.L. Milton, H.M. Prentice, G. Nayak, L. Kara and S. Kesaraju.** Florida Atlantic Univ. **(966.2)**

9:15 Intestinal proteome of rainbow trout is sensitive to dietary phosphorus deficiency. **S. Kirchner, H. Li and R.P. Ferraris.** UMDNJ-New Jersey Med. Sch. **(966.4)**

9:30 Intestinal genomic adaptations induced by dietary phosphorus deficiency differ when rainbow trout are raised in freshwater or seawater. **S. Kirchner, M. Gubbins, H. Liou, S. Sugiura, I. Davies and R.P. Ferraris.** UMDNJ-New Jersey Med. Sch. and Fisheries Res. Svcs., Aberdeen, UK. **(966.3)**

9:45 Transcriptome and proteome analysis of changes induced in trout liver by suppression of dietary fish oil. **C. Kolditz, F. Lefèvre, M. Borthaire and F. Médale.** INRA, St Pée-sur-Nivelle and Rennes, France. **(966.5)**

420. PHENOTYPE AND FUNCTIONAL PLASTICITY OF PULMONARY AIRWAY AND VASCULAR SMOOTH MUSCLE CELLS IN HEALTH AND DISEASE

Featured Topic

(*Sponsored by:* APS Respiration Section)

TUE. 8:00 AM—CONVENTION CENTER, ROOM 154A

CHAIRED: *A.J. HALAYKO AND K. STENMARK*

8:00 Sources of smooth muscle in pulmonary vascular remodeling: heterogeneity, transdifferentiation and progenitor cells. **K. Stenmark.** Univ. of Colorado Hlth. Sci. Ctr.

8:30 Chronic hypoxia and the influence of maturation on serotonergic contractility in ovine pulmonary arteries. **R. Goyal, W.J. Pearce, L.D. Longo and S.M. Wilson.** Univ. of Mississippi Sch. of Pharm. and Loma Linda Univ. **(939.3)**

8:45 Adenosine enhances calcium sensitivity by intracellular mechanisms involving p38 MAPK/MK2 pathway in the mouse mesenteric artery. **P. Martinka, M. Fahling, S. Schmidt, V. Jankowski, R. Schubert, M. Gaestel, P.B. Persson and A. Patzak.** Charité and Med. Clin. IV Charité, Berlin, Univ. of Rostock and Med. Sch. Hannover, Germany. **(939.4)**

9:00 Modulation of pulmonary vascular smooth muscle cell phenotype in hypoxia: role of cGMP-dependent protein kinase. **W. Zhou, C. Dasgupta, S. Negash and J.U. Raj.** Los Angeles Biomed. Res. Inst. at Harbor-UCLA Med. Ctr. **(939.1)**

9:15 Integrin-linked kinase modulates SmMHC expression in tracheal smooth muscle tissues by regulating the activity of serum response factor. **Y. Wu, Y. Huang and S.J. Gunst.** Indiana Univ. Sch. of Med. **(939.2)**

9:30 Caveolae and caveolins as determinants of airway smooth muscle phenotype and function. **A.J. Halayko.** Univ. of Manitoba.

LAST DAY TO VISIT EXHIBITS

Tuesday, May 1

9:00 AM – 3:30 PM

421. RENAL SECTION 2007 YOUNG INVESTIGATOR AWARD

Featured Topic

(*Sponsored by:* APS Renal Section)

TUE. 8:00 AM—CONVENTION CENTER, ROOM 145B

CHAIRED: *V. VALLON*

8:00 Mechanisms of fluid and electrolyte transport along the nephron: lessons from genetic mouse models. **V. Vallon.** UCSD and VA Med. Ctr.

8:30 Spontaneous $[Ca^{2+}]_i$ oscillations reflect nucleotide release from cultured and intact renal epithelia. **J. Leipziger, E. Odgaard, M.E.J. Jensen, M.T. Overgaard, C.S. Geyti and H.A. Praetorius.** Aarhus Univ., Denmark. **(937.1)**

8:45 ATPp induced Ca^{2+} activated Cl^- conductance is dependent on VMD2 (bestrophin-1) expression. **R. Schreiber, R. Barro Sorria, V. Milenkovic, M. Spitzner, B. Hieke and K. Kunzelmann.** Univ. of Regensburg, Germany. **(937.2)**

9:00 Differential regulation of renal ENaC by apical P2X and P2Y receptors. **S.S.P. Wildman, C.M. Turner, J. Marks, D.G. Shirley, B.F. King and R.J. Unwin.** University Col. London. **(937.3)**

9:15 Increased urinary concentrating ability of P2Y2 receptor null mice is associated with marked increase in protein abundances of AQP2 and UT-A in renal medulla. **B.K. Kishore, J.M. Sands, D.E. Kohan, C.F. Martin, Y. Ge, R.D. Nelson and J.D. Klein.** Univ. of Utah and VA Med. Ctr. and Emory Univ. **(757.2)**

9:30 Autocrine purinergic signaling is required for monocilium-driven signaling. **M.B. Hovater, D.S. Olteanu, B.K. Yoder and E.M. Schwiebert.** Univ. of Alabama at Birmingham. **(596.1)**

9:45 Genetic deletion of P2Y2 receptor alters the protein abundances of renal sodium transporters and channels. **R. Listhrop, R. Nelson, C.A. Ecelbarger, D.E. Kohan and B.K. Kishore.** Georgetown Univ. and Univ. of Utah Hlth. Sci. Ctr. **(937.4)**

422. ADIPOCYTE HORMONES

Featured Topic

(*Sponsored by:* APS Endocrinology and Metabolism Section)

TUE. 10:30 AM—CONVENTION CENTER, ROOM 154A

CHAIRED: *W.K. SAMSON*

Metabolic Abnormalities

10:30 Endocrine and metabolic actions of adiponectin. **R.S. Ahima.** Univ. of Pennsylvania Sch. of Med.

11:00 Sites and mechanisms of adiponectin actions in brain. **A.V. Ferguson.** Queen's Univ., Canada.

11:30 Effects of chronic prenatal stress on adult body weight, percent body fat weight and plasma leptin in male rats. **L. Baer, C. Wade and A. Ronca.** U.S. Army Inst. of Surg. Res., San Antonio, NASA Ames Res. Ctr. and Wake Forest Sch. of Med. **(973.1)**

11:45 The effects of peripherally administered 17-beta estradiol and NYP Y1 receptor antagonist, BIBP3226, on food intake, body mass, reproductive organ development and behavior in leptin-deficient mice. **E.A. Essick and J.J. Lepri.** Univ. of North Carolina at Greensboro. **(973.10)**

12:00 Neuroendocrine dysfunction in streptozocin-induced diabetes is ameliorated with leptin lentiviral vector transfection. **K.A. Clark, A.C. Shin, M.P. Sirivelu, S.M.J. MohanKumar and P.S. MohanKumar.** Michigan State Univ. **(907.9)**

12:15 Peripheral leptin decreases arterial pressure and increases heart rate while maintaining fed-state metabolic rate during negative energy balance. **W.D. Knight, R. Seth and J.M. Overton.** Florida State Univ. **(579.21)**

423. CARDIAC ELECTROPHYSIOLOGY AND ARRHYTHMIAS

Featured Topic

(*Sponsored by:* APS Cardiovascular Section)

TUE. 10:30 AM—CONVENTION CENTER, ROOM 146C

CHAIRED: *C. ANTZELEVITCH*

10:30 The APS Cardiovascular Section Carl Wiggers Award Featued Topic: The role of spatial dispersion of repolarization in inherited and acquired sudden cardiac death syndromes. **C. Antzelevitch.** Masonic Med. Res. Lab., Utica, NY.

11:00 Electrotonic remodeling following myocardial infarction: a link to sudden cardiac death? **C.L. del Rio, M. Kukileka, R. Dzwonczyk, M.B. Howie and G.E. Billman.** Ohio State Univ. **(956.9)**

11:15 Suppression of atrial fibrillation by interatrial septum pacing. **F-r. Shen, S-w. Huang, F. Ling, J-m. Chen, Z-j. Wang, H-f. Jin, H-y. Jin and Q. Xia.** Zhejiang Hosp. and Zhejiang Univ. Sch. of Med., People's Republic of China. **(956.4)**

11:30 Slow sodium current INa2 and frequency changes in Purkinje cells. **M. Vassalle and L. Bocchi.** SUNY Downstate Med. Ctr. **(956.5)**

11:45 Natural mechanisms of resistance to ventricular fibrillation during hypothermia: comparative study of a hibernator *Citellus undulatus* versus rabbit. **V.V. Fedorov, A. Glukhov, Y. Egorov, L. Rosenshtraukh and I. Efimov.** Washington Univ. and Cardiol. Res. Ctr., Moscow. **(956.7)**

12:00 Comparison of QT intervals in small and large hibernators and non-hibernators. **G.E. Folk, E.W. Dickson, J.M. Hunt, E.J. Nilles and D.L. Thrift.** Univ. of Iowa and Dubuque Gen. Hosp. **(956.1)**

12:15 Myocardial infarct size and mechanisms of ventricular tachycardia. **D. Xing and J.B. Martins.** Univ. of Iowa Col. of Med. and VA Med. Ctr. **(956.8)**

424. DISORDERS OF THE ENTERIC NERVOUS SYSTEM

Featured Topic

(*Sponsored by:* APS Gastrointestinal and Liver Physiology Section)

TUE. 10:30 AM—CONVENTION CENTER, ROOM 154B

CHAIRED: *S. SRINIVASAN*

10:30 Zebrafish enteric nervous system development: the lessons from lessen. **I. Shepherd.** Emory Univ.

11:00 Development of the enteric nervous system. **A. Burns.** University Col. London.

11:30 Transplantation of PSA-NCAM expressing embryonic stem cell-derived neural progenitors in organotypic mouse gut cultures. **G. Gossrau, J. Thiele, R. Konang, A. Kempe, H. Reichmann and O. Brustle.** Univ. of Dresden Med. Ctr. and Univ. of Bonn. **(924.7)**

11:45 Transgenic mice overexpressing glial-derived neurotrophic factor have increased beta cell mass. **S. Mwangi, C. Mallikarjun, X. Ding, M. Hara, A. Parsadanian, C.P. Larsen, P. Thule, F. Anania, S.V. Sitaraman and S. Srinivasan.** Emory Univ., Univ. of Chicago and Washington Univ. **(924.5)**

12:00 A zebrafish model for Goldberg-Shprintzen syndrome. **I. Shepherd, J-M. Delalande, E. de Graaff, A. Brooks, M. Alves, B. Eggen and R. Hofstra.** Emory Univ. and Erasmus Med. Ctr. and Groningen Univ. and Hosp., The Netherlands. **(924.4)**

12:15 Purinergic receptor activation evokes neurotrophic factor NPY release from mouse olfactory epithelial slices. **C.C. Hegg and S. Kanekar.** Michigan State Univ. and Univ. of Utah. **(924.2)**

425. OSMOREGULATORY FUNCTION IN HEALTH AND DISEASE

Featured Topic

(*Sponsored by:* APS Central Nervous System Section)

TUE. 10:30 AM—CONVENTION CENTER, ROOM 147B

CHAIRED: *S.D. STOCKER AND A.M. SCHREIHOFER*

10:30 Exercise-associated hyponatremia: failure of osmoregulatory mechanisms. **J. Verbalis.** Georgetown Univ.

11:00 CNS pathways mediating osmotic-induced influences on the cardiovascular system. **S.D. Stocker.** Univ. of Kentucky Col. of Med.

11:30 Intracerebroventricular benzamil attenuates the maintenance phase of DOCA-salt hypertension: role of the paraventricular nucleus of the hypothalamus. **J.M. Abrams, K.A. Krawczewski, A. Attar, W.C. Engeland and J.W. Osborn.** Univ. of Minnesota, Minneapolis. **(961.5)**

11:45 Water deprivation functionally upregulates NMDA receptors in the hypothalmic PVN to support renal sympathetic nerve activity and arterial pressure. **Q.H. Chen, Y. Dong, P. Shi, A.S. Calderon, N. Koldzic-Zivanovic and G.M. Toney.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio. **(961.4)**

12:00 Osmoreceptors in the lamina terminalis inhibit thermoregulatory panting in sheep. **M. McKinley, R. McAllen, M. Konishi, D. Whyte and M. Mathai.** Univ. of Melbourne. **(961.9)**

12:15 Functional brainstem pathways linked to sodium deprivation and salt intake. **J.C. Geerling and A.D. Loewy.** Washington Univ. Sch. of Med. **(961.1)**

426. ROLE OF ATP RECEPTORS IN RESPIRATORY RESPONSES: ATP RECEPTORS UNDERLIE CENTRAL CO2 SENSITIVITY (OR NOT)

Featured Topic

(*Sponsored by:* APS Respiration Section)

TUE. 10:30 AM—CONVENTION CENTER, ROOM 155

CHAIRED: *G.D. FUNK AND E. GAUDA*

10:30 Point: ATP receptors underlie central CO_2 sensitivity. **M. Spyer.** University Col. London.

11:00 Counterpoint: ATP receptors do not underlie central CO_2 sensitivity. **D.K. Mulkey.** Univ. of Virginia Hlth. Syst.

11:30 Potent excitation of inspiratory frequency by $P2Y_1$ receptor activation in the preBötzinger complex. **A.R. Lorier, A. Huxtable, C. Wilbur, G. Housley, J. Lipski and G. Funk.** Univ. of Alberta and Univ. of Auckland. **(918.30)**

11:45 Maturation of ATP stimulus-response at rat carotid bodies using amperometric microbiosensors. **J-F. Masson, C. Kranz, B. Mizaikoff and E. Gauda.** Georgia Inst. of Technol. and Johns Hopkins Hosp. **(918.33)**

12:00 Non-linear interaction between α1-noradrenergic and P2 receptor signaling cascades in XII motoneurons. **M.F. Ireland, R. Kanjhan, A. Jung, J. Mewes, T. Adachi, G.B. Miles, G.D. Housley and G.D. Funk.** Univ. of Alberta and Univ. of Auckland. **(918.31)**

12:15 Functional morphology and neurochemical characterization of diverse sensory receptors in mouse lungs. **I. Brouns, I. Pintelon, I. De Proost, F. Oztay, J-P. Timmermans and D. Adriaensen.** Univ. of Antwerp, Belgium. **(761.20)**

427. CURRENT CONCEPTS IN THE CONTROL OF SKIN BLOOD FLOW IN HUMANS

Featured Topic

(*Sponsored by:* APS Environmental and Exercise Physiology Section)

TUE. 3:15 PM—CONVENTION CENTER, ROOM 154B

CHAIRED: *C. CRANDALL AND J. JOHNSON*

3:15 Current concepts in the control skin blood flow in humans. **J. Johnson.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio.

3:45 Rho kinase-mediated cold-induced vasoconstriction is augmented in aged skin. **C.S. Thompson-Torgerson, L.A. Holowatz and W.L. Kenney.** Penn State. **(919.11)**

4:00 Evidence for eNOS participation in cutaneous vasodilation in response to local skin warming but not whole body heat stress. **D.L. Kellogg, J.L. Zhao and Y. Wu.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio. **(919.4)**

4:15 Endogenous NO decreases cutaneous vasoconstrictor responsiveness during lower-body negative pressure in the heat-stressed individual. **M. Shibasaki, S.L. Davis, D.A. Low, D.M. Keller, J. Cui and C.G. Crandall.** Nara Women's Univ., Japan, Presbyterian Hosp. of Dallas and Univ. of Texas Southwestern Med. Ctr. at Dallas. **(919.9)**

4:30 Cyclooxygenase inhibition unmasks nitric oxide dependence of cutaneous reactive hyperemia in humans. **J.M. Stewart, I. Taneja and M.S. Medow.** New York Med. Col. **(919.7)**

4:45 The role of sensory nerves in the cutaneous vasoconstrictor response to local cooling in humans. **G.J. Hodges, J.A. Traeger, T. Tang, W.A. Kosiba, K. Zhao and J.M. Johnson.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio. **(919.10)**

5:00 Role of CGRP in control of skin blood flow during local heating. **G.W. Mack, W.B. Nelsen, K. Foote and E. Norby.** Brigham Young Univ. **(919.5)**

428. NEURAL CONTROL AND AUTONOMIC REGULATION SECTION TRAINEE FEATURED TOPIC

Featured Topic

(*Sponsored by:* APS Neural Control and Autonomic Section)

TUE. 3:15 PM—CONVENTION CENTER, ROOM 154A

CHAIRED: *D. SARTOR AND C. RAY*

3:15 The effect of passive leg heating on alpha-adrenergic-mediated vasoconstriction in humans. **D.M. Keller, M. Sander and C.G. Crandall.** Univ. of Texas Southwestern Med. Ctr. and Natl. Hosp., Copenhagen. **(612.3)**

3:30 The influence of statin therapy on resting sympathetic nerve activity in patients with heart failure. **J.P. Fisher, C. Junor, A. Ahmed, K.M. Gallagher and P.J. Fadel.** Harry S. Truman VA Hosp. and Univ. of Missouri-Columbia and Univ. of Texas Southwestern Med. Ctr. **(910.9)**

3:45 Cardiac sympathetic afferent stimulation inhibits the arterial baroreflex in heart failure at the level of the nucleus tractus solitarius by an angiotensin II mechanism. **W-Z. Wang, Y-X. Pan, L. Gao, I.H. Zucker and W. Wang.** Univ. of Nebraska Med. Ctr. **(910.14)**

4:00 Both Nox2- and Nox4-containing NAD(P)H oxidases are required for the full vasopressor effects of angiotensin-II in the central nervous system. **J.R. Peterson, M.A. Burmeister, X. Tian, J.A. Stupinski, R.V. Sharma and R.L. Davisson.** Weill Med. Col. of Cornell Univ., Col. of Vet. Med., Cornell Univ. and Univ. of Carver Col. of Med. **(752.1)**

4:15 Central treatment of simvastatin normalizes sympathetic outflow in CHF rabbits by a nNOS mechanism. **L. Gao, W. Wang, D. Liu and I.H. Zucker.** Univ. of Nebraska Med. Ctr. **(910.8)**

4:30 Aldosterone upregulates the brain renin-angiotensin system in rats with heart failure. **Y. Yu, S-G. Wei, Z-H. Zhang, E.P. Gomez-Sanchez, R.M. Weiss and R.B. Felder.** Univ. of Iowa, Univ. of Mississippi Med. Ctr. and VA Med. Ctr., Iowa City. **(910.2)**

4:45 Chronic tumor necrosis factor-α infusion induces sympathoexcitation by modulating nitric oxide synthase in rats. **A. Guggilam, M. Haque, P. Ebenezer, K.P. Patel and J. Francis.** LSU, Univ. of Nebraska Med. Ctr. and LSU Hlth. Sci. Ctr., New Orleans. **(582.41)**

5:00 Serotonin receptors partially mediate excitation of cardiac vagal neurons in the nucleus ambiguus post hypoxia/hypercapnia. **H. Kamendi and D. Mendelowitz.** George Washington Univ. **(582.35)**

429. REGULATION OF RENAL HEMODYNAMICS

Featured Topic

(*Sponsored by:* APS Renal Section)

TUE. 3:15 PM—CONVENTION CENTER, ROOM 147B

CHAIRED: *E. INSCHO AND J. PLUZNICK*

3:15 Angiotensin II at-2-receptor-induced nitric oxide release sustains blood perfusion and oxygen availability in the post-clip kidney of two-kidney, one- clip hypertensive rats. **F. Palm, S.G. Connors, W.J. Welch and C.S. Wilcox.** Georgetown Univ. Med. Ctr. **(595.1)**

3:30 GPR91 triggers paracrine signaling in the JGA. **I. Toma, J.J. Kang, E. Bansal, A. Sipos, F. McCulloch and J. Peti-Peterdi.** USC. **(595.4)**

3:45 ADPR cyclase and ryanodine receptors participate in regulation of basal renal blood flow and vasoconstriction induced by Bay-K8644 in vivo. **T.L. Thai and W.J. Arendshorst.** Univ. of North Carolina at Chapel Hill. **(595.10)**

4:00 Functional expression of key components of the olfactory receptor signaling pathway in the distal nephron. **J.L. Pluznick, X. Zhang, D-J. Zou, Q. Yan, E. Wells, T. Wang, S. Firestein and M.J. Caplan.** Yale Univ. Sch. of Med. and Columbia Univ. **(595.12)**

4:15 K channel contributions to afferent arteriolar tone in normal and diabetic rat kidney. **C.M. Troncoso Brindeiro, R.W. Fallet and P.K. Carmines.** Univ. of Nebraska Col. of Med. **(595.18)**

4:30 Effect of ENaC blockade on the myogenic response of rat juxtamedullary afferent arterioles. **Z. Guan, A.K. Cook and E.W. Inscho.** Med. Col. of Georgia. **(595.15)**

4:45 Renal responses to angiotensin II are attenuated in knockout mice lacking the gene for tumor necrosis factor-α. **L. Kopkan, A. Castillo, J. Francis and D.S.A. Majid.** Tulane Univ. Hlth. Sci. Ctr. and LSU Sch. of Vet.Med. **(595.20)**

5:00 Gap junctional communication via connexin40 is essential for the pressure control of the renin system. **F. Schweda, C. Wagner, L. Kurtz, C. Grünberger, C. de Wit and A. Kurtz.** Univ. of Regensburg and Univ. of Lübeck, Germany. **(595.21)**

430. SCIENTIFIC PRINCIPLES FOR EDUCATION RESEARCH

Featured Topic

(*Sponsored by:* APS Teaching of Physiology Section)

TUE. 3:15 PM—CONVENTION CENTER, ROOM 147A

CHAIRED: *B.E. GOODMAN*

Education Session

3:15 Educational research: experimental versus observational. **M. Eisenhart.** Univ. of Colorado at Boulder.

3:45 Scientifically-based education research. **R.L. DeHaan.** Emory Univ.

4:15 Research-led learning in biological science practical activities: supported by student-centred e-Learning. **R.E. Kemm and A.M. Dantas.** Univ. of Melbourne. **(478.22)**

4:30 Having students design and develop laboratory exercises improves student learning outcomes in undergraduate physiology. **D.W. Rodenbaugh, C.J. Failing, E. Fuentes, A.A. Wagner and B.R. Yard.** Minnesota State Univ. Moorhead. **(478.21)**

4:45 Prescribed active learning increases performance in introductory biology. **M.P. Wenderoth, S. Freeman and E. O'Connor.** Univ. of Washington. **(478.20)**

5:00 General discussion.

431. THE VASCULAR SUPPLY DURING AGING

Featured Topic

(*Sponsored by:* APS Cardiovascular Section)

TUE. 3:15 PM—CONVENTION CENTER, ROOM 155

CHAIRED: *S.S. SEGAL*

3:15 Arterial aging and cardiovascular risk. **E.G. Lakatta.** NIA, NIH.

3:45 Microvascular aging and blood flow control. **S.S. Segal.** Univ. of Missouri-Columbia.

4:15 Exercise-stimulated blood flow in older and younger men: a methodological comparison. **S. Casperson, E. Dillon, R. Hickner, N. Newberry, K. Lakshman, M. Mujeeb, J. Angel, R. Urban, D. Chinkes and M. Sheffield-Moore.** Univ. of Texas Med. Branch and East Carolina Univ. **(904.1)**

4:30 Age-associated reductions in endothelium-dependent dilation in humans are related to increases in vascular endothelial protein expression of endothelin-1. **A.J. Donato, I. Eskurza, A. Levy, A.E. Walker, A.E. Silver and D.R. Seals.** Univ. of Colorado at Boulder. **(904.2)**

4:45 Comparison of endothelial function, $O_2^{\cdot-}$ and H_2O_2 production and vascular oxidative stress resistance between the longest-living rodent, the naked mole-rat and mice. **N. Labinskyy, A. Csiszar, Z. Orosz, A. Rivera, K. Smith, R. Buffenstein and Z. Ungvari.** New York Med. Col. and City Col. of CUNY. **(904.3)**

5:00 The age-related alterations in lymphatic pumping. **A.A. Gashev, M. Muthuchamy, O.Y. Gasheva, Z.V. Nepiyushchikh and W. Wang.** Col. of Med., Texas A&M Hlth. Sci. Ctr. **(904.4)**

Physiology InFocus
Novel Technologies in Physiology and Medicine

432. FORENSIC MEDICINE

Symposium

TUE. 8:00 AM—CONVENTION CENTER, BALLROOM B

CHAIRED: *G.G. DAVIS*

8:00 Deaths due to asphyxia. **A.C. Gruszecki.** Southwestern Inst. of Forensic Sci., Dallas and Univ. of Texas Southwestern Med. Ctr.

8:30 Pharmacogenetic applications in forensic medicine. **J.M. Jentzen.** Milwaukee County Med. Examiner Ofc.

9:00 Chronic drug abuse and sudden death. **G.G. Davis.** Jefferson County Coroner, Med. Examiner Ofc., Birmingham,AL.

9:30 Deaths occurring in association with police restraint or use of force. **J.K. Pinckard.** Southwestern Inst. of Forensic Sci., Dallas, Univ. of Texas Southwestern Med. Ctr.

433. NOVEL TECHNOLOGIES AND APPROACHES IN IMAGING

Symposium

TUE. 3:15 PM—CONVENTION CENTER, ROOM 146A

CHAIRED: *P.D. BELL AND P. KOMLOSI*

3:15 Cell tracking using MR imaging. **J.W. Bulte.** Johns Hopkins Univ. Sch. of Med.

3:45 Imaging the molecular pathways of glucose-stimulated insulin secretion. **D.W. Piston.** Vanderbilt Univ.

4:15 Dynamic, high-resolution imaging of cardiovascular development. **M. Dickinson.** Baylor Col. of Med.

4:45 Four-dimensional imaging of the juxtaglomerular apparatus. **P. Komlosi.** Med. Univ. of South Carolina.

WEDNESDAY, MAY 2

Anatomy

434. NEUROVASCULAR INTERACTIONS IN DEVELOPMENT AND DISEASE

Symposium

WED. 8:00 AM—CONVENTION CENTER, ROOM 103A

CHAIRED: *N. WARD*

8:00 Introduction.
8:35 **434.1** Nerve-vessel interactions during vertebrate development. **Y. Mukoyama.** NHLBI, NIH.
9:04 **434.2** VEGFR-3 and VEGF-C: newcomers in the neurovascular cross-talk. **J-L. Thomas.** INSERM U711, Hosp. de la Salpêtrière, Paris.
9:33 **434.3** Molecular mechanisms controlling vessel branching and morphogenesis. **A.C. Eichmann.** INSERM U36, Paris.
10:02 **434.4** Neurotrophins: novel mediators of angiogenesis. **B. Hempstead.** Weill Med. Col. of Cornell Univ.

435. THE IMPACT OF ANATOMY EDUCATION BEYOND THE FIRST YEAR

Symposium

WED. 8:00 AM—CONVENTION CENTER, ROOM 103B

CHAIRED: *A. ZUMWALT*

8:00 Introduction.
8:55 **435.1** A long-term perspective on advanced clinical anatomy programs. **A.M. Gilroy.** Univ. of Massachusetts Med. Ctr.
8:05 **435.2** Anatomy: it's not just for breakfast anymore! Teaching anatomy throughout the continuum of medical education. **A.F. Dalley.** Vanderbilt Univ. Sch. of Med.
9:20 **435.3** What they need, when they need it: easy-to-assemble custom anatomy modules for the clinical years. **A.F.H. van Nievelt and A. Zumwalt.** Duke Univ. Med. Ctr.
8:30 **435.4** Anatomy education: longitudinal by design. **R.L. Drake.** Cleveland Clin. Lerner Col. of Med.
9:45 Discussion.

436. MORPHOGENESIS MEETS MATHEMATICS: HOW EMBRYOGENESIS CAN BE QUANTIFIED

Symposium

WED. 8:00 AM—CONVENTION CENTER, ROOM 156

CHAIRED: *B. RONGISH*

8:00 **436.1** The forces that shape the embryo: biomechanics of gastrulation. **L. Davidson.** Univ. of Pittsburgh.
8:24 **436.2** Multi-scale analysis of cell and tissue patterning during morphogenesis. **E.A. Zamir, A. Czirok, C. Cui, C.D. Little and B.J. Rongish.** Univ. of Kansas Med. Ctr. and Eotvos Univ., Hungary.
8:48 **436.3** Computing an organism: cell-level modeling of development and disease. **J.A. Glazier.** Indiana Univ.
9:12 **436.4** Biomechanical modeling of cardiac looping. **L.A. Taber.** Washington Univ.
9:36 **436.5** The mechanics of neurulation: insights from a whole-embryo computational model. **G.W. Brodland and X. Chen.** Univ. of Waterloo, Canada.

437. PATTERNING IN DEVELOPMENT

Platform

WED. 8:00 AM—CONVENTION CENTER, ROOM 158

CHAIRED: *K. OBERG*

8:00 **437.1** Inhibition of TGF beta signaling by endogenous retinoic acid is essential for primary lung bud induction. **W.V. Cardoso, T. Desai, J. Qian, K. Niederreither, J. Lu and F. Chen.** Boston Univ. Sch. of Med.
8:15 **437.2** Novel molecular mechanisms regulating Shh expression and limb patterning. **E. McGlinn, J. Mao, S. Nissim, A. McMahon and C. Tabin.** Harvard Med. Sch. and Harvard Univ.
8:30 **437.3** Genetic interactions between FGF and SHH signaling in the vertebrate limb. **J.M. Verheyden and X. Sun.** Univ. of Wisconsin-Madison.
8:45 **437.4** A critical role for the SHH-FGF loop during the initiation of limb regeneration. **N. Mishima, B.E. Halverson, J.J. Liu, C.U. Pira and K.C. Oberg.** Loma Linda Univ.
9:00 **437.5** Positional fate map reveals a unified heart forming region. **C. Cui, C.D. Little and B.J. Rongish.** Univ. of Kansas Med. Ctr.
9:15 **437.6** 2,3,7,8-Tetrachlorodibenzo-p-dioxin reduces hypoxia-inducible factor-1 alpha nuclear localization within cardiac tissues during chick embryo development. **J. Wikenheiser, M.K. Walker and M. Watanabe.** Case Western Reserve Univ and Univ. of New Mexico Hlth. Sci. Ctr.
9:30 **437.7** Expression analysis of CITED2 mRNA during chicken heart development. **K. Yang, Y-Q. Doughman, S. Zaidi, T. Brand, Y-C. Yang and M. Watanabe.** Case Western Reserve Univ., Rainbow Babies and Children's Hosp. and Tech Univ. of Braunschweig, Germany.
9:45 **437.8** Cardiac expression patterns of endothelin-converting enzyme suggest a role of endothelin signaling in conduction system development. **D. Sedmera, B.S. Harris, E. Grant, N. Zhang, J. Jourdan, D. Kurkova and R.G. Gourdie.** First Fac. of Med., Charles Univ., Inst. of Animal Physiol. and Genet., Acad. of Sci., Czech Republic and Med. Univ. of South Carolina.
10:00 **437.9** Biomechanical gene activation during cardiovascular development. **E.A.V. Jones, F. Le Noble, L. Yuan and A. Eichmann.** INSERM U36 and Col. of France, Paris and Max Delbrück Ctr. for Molec. Biol. Berlin.

438. DIGITAL EMBRYONIC ATLASES: A TOOL FOR EDUCATION AND RESEARCH

Symposium

WED. 10:30 AM—CONVENTION CENTER, ROOM 103A

CHAIRED: *R. LANSFORD*

10:30 Introduction.
10:35 **438.1** The Edinburgh Mouse Atlas Project: data mapping and spatial organisation. **R.A. Baldock.** MRC Human Genet. Unit, Edinburgh.
11:00 **438.2** Molecular definition of CNS cell types and their physiologic responses in health and disease. **N. Heintz, M.E. Hatten, S. Gong, H. Myriam, A. Schaefer, J. Doyle, T. Stevens, J. Dougherty and P. Greengard.** Rockefeller Univ.
11:25 **438.3** A μMRI atlas of quail development. **S.W. Ruffins, R. Lansford, M. Martin, R. Jacobs and S. Fraser.** Caltech and Univ. of Winnipeg, Canada.
11:50 **438.4** Imaging the developing vasculature in the zebrafish. **B.M. Weinstein.** NICHD, NIH.
12:15 Discussion.

439. MUSCLE DEVELOPMENT: STEM TO STERN

Platform

WED. 10:30 AM—CONVENTION CENTER, ROOM 156

CHAIRED: *M. FERRARI*

10:30 **439.1** Myogenic factors that regulate expression of myogenic microRNAs. **P.K. Rao, R.M. Kumar, M. Farkhondeh, S. Baskerville and H. Lodish.** Whitehead Inst. for Biomed. Res. and MIT.
10:45 **439.2** The in-out mechanism of skeletal muscle translocation and its deployment in the formation of trunk and perineal musculature. **K. Patel, P. Valasek, R. Huang and D. Evans.** Univ. of Reading Sch. of Biol. Sci., UK, Univ. of Freiburg, Germany and Univ. of Sussex, UK.
11:00 **439.3** Ca^{2+} transient-dependent changes in embryonic myocyte proteins during myofibrillogenesis: a proteomic analysis. **J.D. Eskew and M.B. Ferrari.** Univ. of Missouri-Kansas City.
11:15 **439.4** Obscurin, a giant muscle protein of the immunoglobulin superfamily: developmental expression and role in myofibril assembly. **A.B. Borisov, M.O. Raeker, S.B. Geisler and M.W. Russell.** Univ. of Michigan Med. Sch.
11:30 **439.5** Nitric oxide regulation of myotome development by lipid raft constituent nitric oxide synthase in chicken embryos. **K.A. Berry, N. Chandiramani, S.J. Lee and W.F. Denetclaw.** San Francisco State Univ.
11:45 **439.6** **Withdrawn.**
12:00 **439.7** The effect of nandrolone decanoate on the frequency and concentration of satellite cells in skeletal muscle. **M.Z. Allouh and B.W.C. Rosser.** Univ. of Saskatchewan.
12:15 **439.8** Non-muscle myosin IIA is required for skeletal muscle myoblast fusion. **R. Duan and P.J. Gallagher.** Indiana Univ. Sch. of Med.

440. LIMB EVOLUTION AND DEVELOPMENT

Platform

WED. 10:30 AM—CONVENTION CENTER, ROOM 158

CHAIRED: *J. CAMERON*

10:30 **440.1** Self-organization of the limb bud and regeneration blastema: mechanisms to establish proximal and distal boundaries. **D.L. Stocum.** Indiana Univ.-Purdue Univ. Indianapolis.
10:45 **440.2** Filling in the gaps: growth factor initiated intercalary regeneration in salamanders. **K. Crawford.** St. Mary's Col. of Maryland.
11:00 **440.3** Morphogen or mitogen? Re-evaluating sonic hedgehog function in the developing limb. **J. Zhu, M-T. Nguyen, E. Nakamura and S. Mackem.** NCI, NIH and Univ. of Occup. and Envrn. Hlth. , Japan.
11:15 **440.4** New insights into mechanisms governing interdigital cell death during hindlimb development of the chick and duck. **S.M. Hasso, L.E. Black and J.F. Fallon.** Univ. of Wisconsin-Madison.
11:30 **440.5** Differential gene expression between Lmx1b KO and wildtype murine limbs demonstrate potential downstream targets.o: **J.M. Feenstra, C.U. Pira, S.E. Hoffman, R.J. Eppey and K.C. Oberg.** Loma Linda Univ.
11:45 **440.6** Developmental dynamics of mouse pelvis morphogenesis. **C. Pomikal and J. Streicher.** Med. Univ. of Vienna.
12:00 **440.7** The myology of the forelimb of the common hippopotamus, *Hippopotamus amphibius*. **V.L. Naples and J. Grammarye.** Northern Illinois Univ. and Univ. of Kansas.
12:30 Interactions between FGF and BMP signaling pathways during limb development. **M. Lewandoski.** NCI-Frederick.

Biochemistry and Molecular Biology

441. WILLIAM C. ROSE AWARD

WED. 8:30 AM—CONVENTION CENTER, BALLROOM C

8:30 Introductory remarks.
8:35 **441.1** Dynamics of signaling by PKA. **S.S. Taylor.** HHMI and UCSD.

442. ENZYME DESIGN

Symposium

WED. 9:55 AM—CONVENTION CENTER, ROOM 207B

CHAIRED: *S. L. MAYO*

Enzymes - Mechanism and Design Meeting

9:55 Introductory remarks. **S.L. Mayo.**
10:00 Computational enzyme design: methods and applications. **S.L. Mayo.** HHMI, Caltech.
10:35 Engineering horseradish peroxidase with enhanced enantioselectivity. **E. Antipov, K.D. Wittrup and A.M. Klibanov.** MIT. **(803.3)**
10:50 **442.1** Quantum mechanical design and evaluation of active sites of novel enzymes. **K.N. Houk, A.J.T. Smith, J. DeChancie, H. Gunaydin and F. Clemente.** UCLA.
11:25 Using saturation mutagenesis to replace putative catalytic residues in thiamin diphosphate-dependent enzymes. **A. Yep, G.L. Kenyon and M.J. McLeish.** Univ. of Michigan Col. of Pharm. **(805.14)**
11:40 Title not available. **H. Hellinga.** Duke Univ. Med. Ctr.

443. EXTRACELLULAR MATRIX AT THE ORGANISM SCALE

Symposium

WED. 9:55 AM—CONVENTION CENTER, ROOM 202B

CHAIRED: *U. MUELLER*

Extracellular Matrix at Multiple Biological Scales Meeting

9:55 Introductory remarks. **U. Mueller.**
10:00 **443.1** The role of the $\alpha 2\beta 1$ integrin in the tumor microenvironment. **M.M. Zutter, Z. Zhang, N.E. Ramirez and A. Pozzi.** Vanderbilt Univ. Sch. of Med.
10:40 **443.2** Linking integrins to the cytoskeleton during tissue morphogenesis. **N. Brown.** Cambridge Univ.
11:20 A role for N-glycosylation in differential growth control and *Drosophila* development: phenotypic analysis of alg10. **E.P. Lebois and E.M. Selva.** Univ. of Delaware. **(799.4)**
11:35 **443.3** Integrin functions during cell migration in the developing and adult brain. **U. Mueller.** The Scripps Res. Inst.

444. METHYLATING AND DE-METHYLATING DNA

Symposium

WED. 9:55 AM—CONVENTION CENTER, ROOM 206

CHAIRED: *T.H. BESTOR*

From Genome to Epigenome - Modification and Repair Meeting

9:55 Introductory remarks. **T.H. Bestor.**
10:00 **444.1** Oxidative demethylation of DNA. **T. Lindahl and B. Sedgwick.** Cancer Res. UK, South Mimms.
10:30 Identification of regulators of global histone acetylation in yeast *Saccharomyces cerevisiae*. **W. Peng, K. Zhang, C.I. Togawa and S.K. Kurdistani.** UCLA and Univ. of California-Rverside. **(519.4)**
10:45 **444.2** DNA demethylation by the base-excision DNA repair pathway in *Arabidopsis*. **R. Fischer, J-H. Huh, J. Penterman, M. Gehring, D. Zilberman, T. Ballinger and S. Henikoff.** Univ. of California-Berkeley and Fred Hutchinson Cancer Res. Ctr., HHMI.
11:15 Diet-induced hypermethylation at viable yellow agouti is not inherited transgenerationally. **R.A. Waterland, K.G. Tahiliani, M.T. Rached and M. Travisano.** USDA, Baylor Col. of Med. and Univ. of Houston. **(519.3)**
11:30 The DNA methylation inhibitor 5-aza-2'-deoxycytidine induces reversible genome-wide DNA damage that is distinctly influenced by DNA methyltransferases 1 and 3B. **K.D. Robertson, U. Sankpal and K.D. Brown.** Univ. of Florida. **(664.5)**
11:45 **444.3** Specific methylation of $tRNA^{Asp}$ by a DNA methyltransferase homologue. **T.H. Bestor and M.G. Goll.** Col. of Physicians and Surgeons, Columbia Univ. and Carnegie Inst. of Washington, Baltimore.

445. METABOLIC SENSING AND SIGNALING

Symposium

WED. 9:55 AM—CONVENTION CENTER, ROOM 207A

CHAIRED: *J. RUTTER*

Metabolism Meeting

9:55 Introductory remarks. **J. Rutter.**
10:00 **445.1** PAS kinase and the maintenance of energy homeostasis. **J. Rutter.** Univ. of Utah.
10:30 Glucose activation of carbohydrate response element binding protein requires a nuclear event independent of nucleocytoplasmic shuttling. **M.N. Davies, B.L. O'Callaghan and H.C. Towle.** Univ. of Minnesota, Minneapolis. **(824.2)**
10:45 **445.2** TOR signaling and control of cell growth. **M.N. Hall.** Univ. of Basel.
11:15 A PGC-1alpha:O-GlcNAc transferase complex regulates Foxo1a activation in response to glucose. **M.P. Housley, J.T. Rodgers, P. Puigserver and G.W. Hart.** Johns Hopkins Univ. Sch. of Med. **(824.6)**

11:30 Energy balance impairment in mice with central nervous system-specific glutamate dehydrogenase knockout. **F. Frigerio, S. Carobbio, R. Gruetter and P. Maechler.** Univ. Med. Ctr., Geneva and EPFL, Lausanne. **(824.5)**

11:45 **445.3** AMP-activated protein kinase and the regulation of energy metabolism. **D. Carling.** Imperial Col, Hammersmith Hosp., London.

446. INFECTIOUS DISEASES IN MINORITY POPULATIONS — TUBERCULOSIS

Symposium

WED. 9:55 AM—CONVENTION CENTER, ROOM 209C

CHAIRED: *M. MILLA*

Minority Affairs Committee Sposored Symposium

9:55 Introductory remarks. **M. Milla.**

10:00 **446.1** The mechanism of action of 4-nitroimidazoles against *Mycobacterium tuberculosis*. **U.H. Manjunatha.** NIAID, NIH.

10:45 **446.2** The role of resuscitation promoting factors in the virulence of *Mycobacterium tuberculosis*. **B.D. Kana, B.G. Gordhan, N. Sung, K. Downing, E. Machowski, L. Matsoso, L. Tsenova, M. Young, G. Kaplan and V. Mizrahi.** Univ. of the Witwatersrand, Natl. Hlth. Lab. Svc., South Africa, Publ. Hlth. Res. Inst., Newark, NJ and Univ. of Wales.

11:30 **446.3** The respiratory chain of *M. tuberculosis*. **H. Rubin.** Univ. of Pennsylvania.

447. PROTEIN MODIFICATION AND TURNOVER

Symposium

WED. 9:55 AM—CONVENTION CENTER, ROOM 209A

CHAIRED: *C. P. HILL*

Protein Synthesis, Folding and Turnover Meeting

9:55 Introductory remarks. **C.P. Hill.**

10:00 **447.1** Transport of proteins in and out of the endoplasmic reticulum. **T.A. Rapoport.** HHMI, Harvard Med. Sch.

10:30 The proteasome participates in the dislocation of an ER-resident type I membrane glycoprotein. **B.M. Baker and D. Tortorella.** Mount Sinai Sch. of Med. **(807.3)**

10:45 **447.2** Protein modification by SUMO, a small ubiquitin-like modifier. **C.D. Lima.** Sloan-Kettering Inst.

11:15 Understanding how phoshorylation of the UDP-glucuronosyltransferase system controls and protects against chemical toxins. **N.K. Basu, P.S. Mitra, A. Garza, M. Basu, R. Banerjee and I.S. Owens.** NICHD, NIH. **(807.13)**

11:30 Dimerisation of adaptor protein Keap1 is required to correctly position Nrf2 for ubiquitylation upon the Cul3-Rbx1 holoenzyme: the fixed-ends model. **M. McMahon, K. Itoh, M. Yamamoto and J.D. Hayes.** Univ. of Dundee, Ninewells Hosp. and Med. Sch. and Univ. of Tsukuba, Japan. **(807.7)**

11:45 **447.3** Structural basis for proteasome activation. **C.P. Hill.** Univ. of Utah.

448. SIGNALING TO THE CYTOSKELETON

Symposium

WED. 9:55 AM—CONVENTION CENTER, ROOM 202A

CHAIRED: *R. D. MULLINS*

Signaling Pathways Controlling Cell Structure and Fate Meeting

9:55 Introductory remarks. **R.D. Mullins.**

10:00 **448.1** Actin regulation by WASP and WAVE. **M.K. Rosen, H-C. Cheng, L. Doolittle, A. Ismail, S. Padrick and S. Panchal.** Howard Hughes Med. Inst. and Univ. of Texas Southwestern Med. Ctr.

10:30 MgcRacGAP promotes GTPase flux to maintain a tightly focused zone of Rho activity during cytokinesis. **A.L. Miller and W.M. Bement.** Univ. of Wisconsin-Madison. **(787.5)**

10:45 **448.2** Conserved proteins control polarity during cell migration. **S. Etienne-Manneville–:.** Inst. Pasteur.

11:15 Beta-arrestin-dependent regulation of the cofilin pathway downstream of protease-activated receptor-2. **M. Zoudilova, L. Ge, P. Kumar, G.M. Bokoch and K.A. DeFea.** Univ. of California-Riverside and The Scripps Res. Inst. **(787.2)**

11:30 Mechanism of filamin A actin filament crosslinking. **F. Nakamura, T. Osborn, J.H. Hartwig and T.P. Stossel.** Brigham and Women's Hosp. **(787.1)**

11:45 **448.3** Reconstitution of plasmid DNA segregation from purified components. **R.D. Mullins, E.C. Garner and C.S. Campbell.** UCSF Sch. of Med.

449. ASBMB MEET THE SPEAKERS SERIES

Special Session

WED. 1:00 PM—CONVENTION CENTER, ASBMB LOUNGE

Meet the ASBMB Award Lecturers in an informal setting for discussion and networking. Check the ASBMB Lounge for the daily schedule.

450. SPECIFIC PROTEIN-LIPID INTERACTIONS

Symposium

WED. 2:15 PM—CONVENTION CENTER, ROOM 201

CHAIRED: *M. H. GELB*

Biochemistry and Signaling of Lipids Meeting

2:15 Introductory remarks. **M.H. Gelb.**

2:20 **450.1** Structure of the aquaporin-0 mediated membrane junction. **T. Gonen.** Univ. of Washington.

2:50 Experimental evidence for specificity in rhodopsin-lipid interactions. **O. Soubias, W.E. Teague and K. Gawrisch.** NIAAA, NIH, Rockville. **(781.5)**

3:05 **450.2** Translocon-assisted folding of membrane proteins: new insights into lipid-protein interactions. **S.H. White.** Univ. of California-Irvine.

3:35 The role of phosphatidylserine in Akt activation: a novel activation scheme for Akt. **B.X. Huang and H-Y. Kim.** NIAAA, NIH, Rockville. **(781.8)**

3:50 Identification of the site for phospholipid binding to peroxiredoxin 6: coordination of the phospholipase and peroxidase activities. **Y. Manevich, T. Shuvaeva, S.I. Feinstein and A.B. Fisher.** Univ. of Pennsylvania. **(781.12)**
4:05 **450.3** The role of phospholipases A2 in eicosanoid generation and airway inflammation. **M.H. Gelb.** Univ. of Washington.

451. FRAGMENT-BASED DRUG DISCOVERY

Symposium

WED. 2:15 PM—CONVENTION CENTER, ROOM 202A

CHAIRED: *D. A. ERLANSON*

Chemical Biology Meeting

2:15 Introductory remarks. **D.A. Erlanson.**
2:20 **451.1** Fragment based drug discovery using rational design. **H. Jhoti.** Astex Therapeut., Cambridge, UK.
2:55 Structural analysis of the binding of *myo*-inositol pentakisphosphates by the C-terminal PH domain of pleckstrin. **S.G. Jackson, Y. Zhang, K. Zhang, X. Bao, C. Shultz, R. Haslam and M. Junop.** McMaster Univ., Canada and EMBL, Heidelberg. **(641.6)**
3:10 **451.2** Fragment-based drug discovery at adaptive protein sites. **D.A. Erlanson.** Sunesis Pharmaceut. Inc., South San Francisco.
3:45 The 3D structures of Ca^{2+}-S100B in Zn^{2+}- and pentamidine-bound complexes as determined by X-ray crystallography. **T.H. Charpentier, P.T. Wilder, K.M. Varney, E.A. Toth and D.J. Weber.** Univesity of Maryland Baltimore. **(641.11)**
4:00 **451.3** Substrate-based fragment identification and optimization for inhibitor discovery. **J.A. Ellman.** Univ. of California-Berkeley.

452. CHROMOSOME SEGREGATION AND ANEUPLOIDY

Symposium

WED. 2:15 PM—CONVENTION CENTER, ROOM 206

CHAIRED: *H. YU*

The Chromosome Cycle Meeting

2:15 Introductory remarks. **H. Yu.**
2:20 **452.1** Molecular mechanism of the spindle checkpoint. **H. Yu.** Univ. of Texas Southwestern Med. Ctr.
2:50 Proclivity for constitutive tumors in mice deficient for MAD1 mitotic checkpoint protein. **K-T. Jeang and Y-H. Chi.** NIAID, NIH. **(813.2)**
3:05 **452.2** Regulators of chromosome movement and the mitotic spindle checkpoint. **G.J. Gorbsky, M.J. Kallio, M.J. Emanuele, P.T. Stukenberg and V.V. Vorozhko.** Oklahoma Med. Res. Fndn., VTT, Tuku, Finland and Univ. of Virginia.
3:35 The localization and regulation of shugoshin at vertebrate kinetochores. **W. Lan and T. Stukenberg.** Univ. of Virginia. **(812.4)**
3:50 A novel separase interacting protein—Insep5 functions in sister chromatid cohesion and separation. **N. Zhang, S.X. Pradhan, B. Jena, P.H. Rao and D. Pati.** Baylor Col. of Med. **(813.1)**
4:05 **452.3** RanBP2/Nup358 is required for topoisomerase II/alpha-mediated DNA decatenation, proper chromosome segregation and tumor suppression. **J.M. van Deursen, M. Dawlaty, K. Jeganathan and M. Liviu.** Mayo Clin.

453. STRUCTURAL AND MECHANISTIC EVOLUTION

Symposium

WED. 2:15 PM—CONVENTION CENTER, ROOM 207B

CHAIRED: *J. P. NOEL*

Macromolecular Structure and Dynamics Meeting

2:15 Introductory remarks. **J.P. Noel.**
2:20 **453.1** Identifying and manipulating evolutionary determinants linking catalytic specificities in enzymes of specialized metabolism. **J.P. Noel and P. O'Maille.** Howard Hughes Med. Inst., Salk Inst.
2:50 Ligand specificity determined by residues in hypervariable loops that cluster on limbs of a structure tree. **W.L. Duax, R. Huether, Q. Mao, C. Weeks, V. Pletnev, T. Umland and V. Cody.** Hauptman-Woodward Inst., Buffalo. **(801.3)**
3:05 **453.2** The selective cause of an ancient adaptation. **A.M. Dean.** Univ. of Minnesota, St. Paul.
3:35 Changing the substrate specificity of creatine kinase to glycocyamine through mutagenesis of non-conserved residues. **A.C. Azevedo, D. Fraga and P.L. Edmiston.** Col. of Wooster, OH. **(801.1)**
3:50 Effect of single molecule fluctuations on the enzymatic turnover rate in multi-molecule systems. **N. Dan.** Drexel Univ. **(650.4)**
4:05 Evolutionary design of protein structure and function. **R. Ranganathan.** HHMI, Univ. of Texas Southwestern Med. Ctr.

454. NUCLEAR DYNAMICS

Symposium

WED. 2:15 PM—CONVENTION CENTER, ROOM 207A

CHAIRED: *Y. ZHENG*

Organelle Dynamics Meeting

2:15 Introductory remarks. **Y. Zheng.**
2:20 **454.1** Nuclear remodeling during cell division. **K.S. Ullman.** Univ. of Utah.
2:50 Traffic rules for nuclear import pathways: Karyopherin beta2 and Kap104p. **Y.M. Chook.** Univ. of Texas Southwestern Med. Ctr. at Dallas. **(820.1)**
3:05 **454.2** Spindle morphogenesis and chromosome segregation, beyond the microtubule cytoskeleton. **M-Y. Tsai, Q. Vong and Y. Zheng.** Carnegie Inst. of Washington and HHMI, Baltimore.
3:35 Cloning and initial characterization of a family A DNA polymerase from *Entamoeba histolytica*: a putative mitochondrial DNA polymerase. **B.G. Luis, G. Pastor-Palacios, R. Rodriguez-Rocha and E.I. Azuara-Liceaga.** CINVESTAV-IPN and UACM, Mexico City. **(822.1)**

3:50 Analysis of Spc98 homologues in the plant family Brassicaceae. **A.N. Bliemeister and R. McClinton.** Grand Valley State Univ. **(822.2)**
4:05 **454.3** Actin moving in and out of the nucleus: in what form? **U. Aebi.** Univ. of Basel.

455. RNA MODIFICATION: MECHANISM AND FUNCTION

Symposium

WED. 2:15 PM—CONVENTION CENTER, ROOM 209A

CHAIRED: *R. REENAN*

RNA Meeting

2:15 Introductory remarks. **R. Reenan.**
2:20 **455.1** Physiological roles of edited serotonin 2C receptor isoforms. **R.B. Emeson, M.V. Morabito and M.M. Jacobs.** Vanderbilt Univ.
2:55 Comparison of A-to-I RNA editing in wild type strains, Canton S and Oregon R, of *Drosophila melanogaster*. **L.A. Smith, K. Pituch, H. Moy and J. Nadolski.** Benedictine Univ., IL. **(810.1)**
3:10 **455.2** RNA editing of microRNAs. **K. Nishikura.** Wistar Inst.
3:45 Potential biological consequences of mRNA oxidation-induced translation errors. **M. Tanaka, P. Jaruga, M. Dizdaroglu, P.B. Chock and E.R. Stadtman.** NHLBI, NIH and NIST, Gaithersburg, MD. **(810.2)**
4:00 **455.3** Fine tuning of behavior by RNA editing. **R. Reenan, T. Koyejo, J. Jepson and Y. Savva.** Brown Univ.

456. PROTEOMICS OF CELL SYSTEMS

Symposium

WED. 2:15 PM—CONVENTION CENTER, ROOM 202B

CHAIRED: *R. AEBERSOLD*

Systems Biology Meeting

2:15 Introductory remarks. **R. Aebersold.**
2:20 **456.1** Proteomics for elucidating protein function, regulatory networks and improving human health. **M. Snyder.** Yale Univ.
2:50 The MAPPIT toolbox: novel strategies to analyze molecular interactions in intact cells. **J.H. Tavernier, I. Lemmens and S. Lievens.** Ghent Univ., Belgium. **(794.3)**
3:05 **456.2** Systems-wide analysis of protein complexes in *Saccharomyces cerevisiae*. **A-C. Gavin, P. Aloy, R.B. Russell and G. Superti-Furga.** European Molec. Biol. Lab. and Cellzome AG, Heidelberg, ICREA and IRB, Barcelona and Ctr. for Molec. Med., Austrian Acad. of Sci., Vienna.
3:35 Structure, function, and evolution mapping of the protein structure universe. **S-H. Kim, J. Hou, S-R. Jun, G.E. Sims and I-G. Choi.** Univ. of California-Berkeley and Lawrence Berkeley Natl. Lab. **(794.5)**
3:50 Identification of potential yeast casein kinase 1 substrates via a comparative phosphoproteomic analysis. **C.J. Brame and L.C. Robinson.** Centenary Col. and LSU Hlth. Sci. Ctr., Shreveport. **(794.6)**
4:05 **456.3** Quantitative proteomics and systems biology. **R. Aebersold.** ETH Zurich.

Nutrition

457. NIST MICRONUTRIENTS MEASUREMENT QUALITY ASSURANCE WORKSHOP

Workshop

WED. 9:00 AM—CONVENTION CENTER, BALLROOM A

CHAIRED: *J.B. THOMAS*

9:00 Introduction.
9:15 Review of results from interlaboratory comparison exercises. **J.B. Thomas.** NIST, Gaithersburg, MD.
9:30 Measurement trends: new and old for fat-soluble vitamins and vitamin C in serum. **D. Duewer.** NIST, Gaithersburg, MD.
10:00 The determination of oxidized and reduced CoQ10 in plasma by HPLC with electrochemical detection. **P. Ullucci.** ESA Labs., Chelmsford, MA.
10:30 NHANES trends for B vitamins. **C. Pfeiffer.** Ctrs. for Dis. Control and Prevent.
11:00 Vitamin B_6: analytical issues. **M. Rybak.** Ctrs. for Dis. Control and Prevent.
11:30 Lunch (on your own).
1:00 Analysis of vitamin B_6 and vitamin D in serum for assessment of vitamin status. **K. Phinney.** NIST, Gaithersburg, MD.
1:30 The expanding role of mass spectrometry in folate research. **B. Nelson.** NIST, Gaithersburg, MD.
2:00 Folate: analytical issues. **Z.F. Qari.** Ctrs. for Dis. Control and Prevent.
2:30 Status of forthcoming serum-based and relateld SRMs. **K. Sharpless.** NIST, Gaithersburg, MD.
3:00 Discussion of Q&A program needs.
3:30 Wrap-up.

Pharmacology

458. PHARMACOLOGY AND SIGNAL TRANSDUCTION OF TASTE

Symposium

(*Sponsored by:* The Division for Behavioral Pharmacology; the Division for Molecular Pharmacology; the Division for Neuropharmacology; and the Division for Systems and Integrative Pharmacology)

WED. 8:30 AM—CONVENTION CENTER, ROOM 141

CHAIRED: *R.K. PALMER*

8:30 Introduction. **R.K. Palmer.** Linguagen Corp., Cranbury, NJ.
8:35 Coding of taste signaling from receptor to brain. **R.F. Margolskee.** Mount Sinai Sch. of Med.
9:00 Discussion.
9:10 Behavioral assessment of taste function in rodent models. **A.C. Spector.** Univ. of Florida.
9:35 Discussion.
9:45 Transient receptor potential channels in taste signaling. **R.W. Bryant.** Linguagen Corp., Cranbury, NJ.
10:10 Discussion.
10:20 Effects of therapeutic drugs on taste and their impact on compliance and nutritional status. **S.S. Schiffman.** Duke Univ. Med. Ctr.
10:45 Discussion.

459. PERINATAL STRESS ALTERS DRUG RESPONSES INTO ADULTHOOD

Symposium

(*Sponsored by:* The Division for Neuropharmacology; the Division for Behavioral Pharmacology; and the Division for Systems and Integrative Pharmacology)

WED. 8:30 AM—CONVENTION CENTER, ROOM 140B

CHAIRED: *M.KUHAR*

Developmental Pharmacology

8:30 Maternal separation as a perinatal stressor. **D. Francis.** Univ. of California-Berkeley.
8:50 Discussion.
9:00 Maternal separation affects propensity to abuse drugs. **M. Kuhar.** Emory Univ.
9:20 Discussion.
9:30 Effects of maternal separation on brain serotonin systems. **A. Vicentic.** NIMH, NIH.
9:50 Discussion.
10:00 Neonatal isolation as a model of stress and its effects on drugs in adulthood. **T.A. Kosten.** Baylor Col. of Med.
10:20 Discussion.
10:30 Epigenetic mechanisms as candidates for long-term changes in drug effects. **M. Szyf.** McGill Univ.
10:50 Discussion.

460. MECHANISMS OF IDIOSYNCRATIC DRUG REACTIONS

Symposium

(*Sponsored by:* The Division for Toxicology; the Division for Clinical Pharmacology, Pharmacogenomics, and Translational Medicine; the Division for Drug Discovery, Development and Regulatory Affairs; and the Division for Drug Metabolism)

WED. 8:30 AM—CONVENTION CENTER, ROOM 142

CHAIRED: *C. JU*

COCHAIRED: *D.R. PETERSEN*

8:30 Introduction. **C. Ju.** Univ. of Colorado Hlth. Sci. Ctr.
8:35 Cellular consequences of drug bioactivation. **B.K. Park.** Univ. of Liverpool.
9:00 Discussion.
9:05 Role of cytokines and other factors in determining susceptibility to drug-induced liver injury. **L.R. Pohl.** NHLBI, NIH.
9:30 Discussion.
9:35 Animal models of idiosyncratic drug reactions. **J. Uetrecht.** Univ. of Toronto Fac. of Pharm. and Med.
10:00 Discussion.
10:05 Vaccine-induced cellular immunity: integrating innate and adaptive signaling pathways. **R.M. Kedl.** Natl. Jewish Med. and Res. Ctr.
10:30 Discussion.
10:35 How do systemically administered drugs provoke reactions in the skin? **C.K. Svensson.** Purdue Univ. Col. of Pharm., Nursing, and Hlth. Sci.
11:00 Discussion.

461. GENETIC VARIATIONS IN REGULATORY FACTORS AFFECTING DRUG METABOLISM/ DISPOSITION

Symposium

(*Sponsored by:* The Division for Drug Metabolism; the Division for Cardiovascular Pharmacology; the Division for Clinical Pharmacology, Pharmacogenomics and Translational Medicine; and the Division for Toxicology)

WED. 8:30 AM—CONVENTION CENTER, ROOM 143C

CHAIRED: *E. SCHUETZ*

Pharmacogenomics

8:30 Peroxisome proliferator activated receptor gamma variation may underlie response to troglitazone therapy in women at risk for type 2 diabetes. **R.M. Watanabe.** USC.
8:55 Discussion.
9:00 Pharmacogenetics of constitutive androstane receptor. **J.K. Lamba.** St. Jude Children's Res. Hosp.
9:25 Discussion.

9:30 CAR2 displays unique ligand binding and RXRα heterodimerization characteristics. **J.G. Dekeyser, S.S. Auerbach, M.A. Stoner and C.J. Omiecinski.** Penn State and Univ. of Washington. **(886.17)**
9:40 Discussion.
9:45 FXR: interindividual polymorphisms and variation in FXR expression. **R.B. Kim.** Univ. of Western Ontario.
10:10 Discussion.
10:15 PXR: genetic variants of PXR (NR1I2) and their implications in drug metabolism and pharmacogenetics. **E. Schuetz.** St. Jude Children's Res. Hosp.
10:40 Discussion.

462. NITRIC OXIDE DEFICIENCY AND CARDIOVASCULAR DISEASE

Symposium

(*Sponsored by:* The Division for Systems and Integrative Pharmacology; and the Division for Cardiovascular Pharmacology)

WED. 8:30 AM—CONVENTION CENTER, ROOM 143A/B

CHAIRED: *A.F. CHEN*

8:30 Chair's introduction.
8:35 Nitric oxide deficiency and cardiovascular disease: lessons from NO synthase knockout and transgenic studies. **M. Scherrer-Crosbie.** Massachusetts Gen. Hosp.
9:00 Discussion.
9:05 Polymorphisms in the eNOS gene and the risk of ischemic heart disease. **D.M. McNamara.** Univ. of Pittsburgh Med. Ctr.
9:30 Discussion.
9:35 GTP cyclohydrolase I and eNOS uncoupling in salt-sensitive hypertension. **F.Y. Chen.** Michigan State Univ. Col. of Med.
10:00 Discussion.
10:05 Endothelial dysfunction and nitric oxide enhancing therapy: a new approach to the treatment of heart failure. **A.L. Taylor.** Univ. of Minnesota Med. Sch.
10:30 Discussion.
10:35 Vascular endothelial growth factor 121 attenuates hypertension, myocardial necrosis and renal injury-induced by N^{ω}-nitro-L-arginine methyl ester and angiotensin II in rats. **Y. Zhang, J-Y. Ma, I. Kerr, M. Su, N.S. Pollitt, A.A. Protter, F. Sannajust and Z. Li.** Scios Inc., Fremont, CA. **(725.1)**
10:45 Discussion.

Physiology

463. BIOMARKERS OF ACUTE KIDNEY INJURY: EARLY DIAGNOSIS, PATHOGENESIS AND RECOVERY

Symposium

(Supported by an educational grant from Abbott Diagnostics)

(*Sponsored by:* The American Federation for Medical Research)

WED. 8:00 AM—CONVENTION CENTER, ROOM 145A

CHAIRED: *C. PARIKH*

Translational Physiology

8:00 Role of biomarkers in diagnosis and prognosis of acute kidney injury. **C. Parikh.** Yale Univ. and VA Med. Ctr.
8:30 Preclinical studies of biomarkers of acute kidney injury. **C. Edelstein.** Univ. of Colorado Hlth. Sci. Ctr.
9:00 Biomarkers of injury after deceased kidney transplantation. **P. Deverajan.** Cincinnati Children's Med. Ctr.
9:30 Stem cells in acute kidney injury: therapeutic potential or biomarkers? **L. Cantley.** Yale Univ. Sch. of Med.

464. EXERCISE HYPEREMIA: ARE THERE ANY ANSWERS YET?

Symposium

(*Sponsored by:* The Journal of Physiology, The Physiological Society, UK)

WED. 8:00 AM—CONVENTION CENTER, ROOM 147B

CHAIRED: *M.J. JOYNER AND B. SALTIN*

8:00 Exercise hyperemia: overview, statement of the problem, and recent ideas from human studies. **B. Saltin.** Univ. of Copenhagen.
8:20 Mechanical factors and vasodilation at the onset of exercise. **P.S. Clifford.** Med. Col. of Wisconsin.
8:40 Adenosine and related compounds in exercise hyperemia. **J. Marshall.** Univ. of Birmingham.
9:00 Exercise hyperemia: the search for the dilating factor. **D.J. Duncker.** Erasmus Med. Ctr., Univ. Med. Ctr. Rotterdam.
9:20 Exercise hyperemia: is anything obligatory but the hyperemia? **M.J. Joyner.** Mayo Clin. Col. of Med.
9:40 General discussion.

465. HEART FAILURE AND EXERCISE: AUTONOMIC AND CARDIOVASCULAR RESPONSES

Symposium

WED. 8:00 AM—CONVENTION CENTER, ROOM 146B

CHAIRED: *L. SINOWAY*

8:00 Introduction. **L. Sinoway.** Penn State Hershey Med. Ctr.
8:05 The exercise pressor reflex in health and disease. **M. Garry.** Univ. of Texas Southwestern Med. Ctr.
8:30 Cardiovascular responses to exercise and muscle metaboreflex activation during the recovery from pacing induced heart failure. **R. Augustyniak.** Wayne State Univ.
8:55 Abnormal control of sympathetic nerve activation during exercise in humans with heart failure. **H. Middlekauff.** UCLA.
9:20 Exercise training, radical stress and sympathetic nerve activity in heart failure. **I. Zucker.** Univ. of Nebraska Med. Ctr.
9:45 Wrap-up and conclusion. **L. Sinoway.** Penn State Hershey Med. Ctr.

466. MECHANOTRANSDUCTION IN CELL MIGRATION

Symposium

(*Sponsored by:* The Biomedical Engineering Society)

WED. 8:00 AM—CONVENTION CENTER, ROOM 147A

CHAIRED: *S. LI*

8:00 Mechanosensing and protein fluxes at focal adhesions. **W. Guo.** Univ. of Massachusetts Med. Sch.
8:30 Traction force microscopy of cardiovascular cells. **D. Hammer.** Univ. of Pennsylvania.
9:00 β-Integrin affinity and valence in binding ICAM-1 regulates contact mediated emigration of PMN in shear flow. **S. Simon.** Univ. of California-Davis.
9:30 Migrating cells use sticky fingers to find their path. **C. Galbraith.** NIDCR, NIH.

467. CALCIFIC AORTIC VALVE DISEASE: A DISEASE PROCESS COMES OF AGE?

Symposium

(*Sponsored by:* The American Federation for Medical Research)

WED. 10:30 AM—CONVENTION CENTER, ROOM 147B

CHAIRED: *K.D. O'BRIEN AND E.R. MOHLER III*

10:30 Epidemiology and genetics of calcific aortic valve disease. **K.D. O'Brien.** Univ. of Washington.
11:00 Human and animal models of aortic valve disease. **E.R. Mohler iii.** Univ. of Pennsylvania.
11:30 Molecular mechanisms of valve calcification. **C.M. Gianchelli.** Univ. of Washington.
12:00 Imaging studies and pharmacological interventions in aortic valve disease. **D.M. Shavelle.** Harbor-UCLA Med. Ctr.

468. ESTROGEN AND THE CARDIOVASCULAR SYSTEM

Symposium

(*Sponsored by:* APS Endocrinology and Metabolism Section)

WED. 10:30 AM—CONVENTION CENTER, ROOM 145B

CHAIRED: *M.C. CHAPPELL*

10:30 Are differential estrogen responses tissue or receptor dependent? **K.S. Korach.** NIEHS, NIH.
10:50 Discussion.
11:00 Estrogen receptor subtypes and gender differences in cardiac hypertrophy. **E. Murphy.** NHLBI, NIH.
11:20 Discussion.
11:30 Estrogen and cardiovascular inflammation. **S.T. Davidge.** Univ. of Alberta.
11:50 Discussion.
12:00 Divergent actions of ovarian hormones in hypertension and end organ damage in young and aged hypertensive models. **M.C. Chappell.** Wake Forest Univ. Sch. of Med.
12:20 Discussion.

469. WHAT HAVE WE LEARNED ABOUT RESPIRATORY CONTROL FROM THE USE OF TRANSGENIC MODELS?

Symposium

(*Sponsored by:* APS Respiration Section)

WED. 10:30 AM—CONVENTION CENTER, ROOM 154A

CHAIRED: *J.A. NEUBAUER AND C. GAULTIER*

10:30 Transgenic models to study developmental respiratory control disorders in humans. **C. Gaultier.** Hosp. Robert Debré, Paris.
10:50 Discussion.
11:00 Respiratory plasticity in a rat model of amyotrophic lateral sclerosis. **G.S. Mitchell.** Univ. of Wisconsin-Madison.
11:20 Discussion.
11:30 Disturbance in aminergic modulation may underlie erratic breathing in a mouse model for Rett syndrome. **J-M. Ramirez.** Univ. of Chicago.
11:50 Discussion.
12:00 Rodent models of ventilatory acclimatization to hypoxia. **F.L. Powell.** UCSD Sch. of Med.
12:20 Discussion.

No Smoking

In Session Rooms, Poster or Exhibit Area

470. CONTROL OF CORONARY BLOOD FLOW

Featured Topic

(*Sponsored by:* APS Cardiovascular Section)

WED. 8:00 AM—CONVENTION CENTER, ROOM 155

CHAIRED: *W.M. CHILIAN*

8:00 Anatomically based computational models of coronary blood flow: towards regulation. **N. Smith.** Oxford Univ.
8:30 Coronary endothelial function during the development of cardiac hypertrophy: insights from pharmacological intervention studies. **X. Sun and D.D. Ku.** Univ. of Alabama at Birmingham. **(900.3)**
8:45 Beyond Venus and Mars: the effect of gender and age on endothelial dysfunction in coronary arterioles. **A.J. LeBlanc, R. Reyes and J.M. Muller-Delp.** West Virginia Univ. Sch. of Med. **(900.4)**
9:00 Perivascular adipose tissue alters coronary arterial smooth muscle and endothelial function. **I.N. Bratz, G.A. Payne, R. Watanable, H.G. Bohlen, G.M. Dick and J.D. Tune.** Indiana Univ. Sch. of Med. **(900.8)**
9:15 Role of oxidative stress in parity-induced endothelial dysfunction. **H. Tawfik and S.E. Kaufman.** Univ. of Alberta. **(900.9)**
9:30 What to gain from coronary flow control. **J. Spaan.** Univ. of Amsterdam.

471. ENDOCRINE HYPERTENSION

Featured Topic

WED. 8:00 AM—CONVENTION CENTER, ROOM 154A

CHAIRED: *W.K. SAMSON*

8:00 Adiponectin microinjection into the nucleus tractus solitarius causes decreases in blood pressure. **P.M. Smith and A.V. Ferguson.** Queen's Univ., Canada. **(579.14)**
8:15 Adiponectin controls the excitability of neurons in the nucleus of the solitary tract. **T.D. Hoyda and A.V. Ferguson.** Queen's Univ., Canada. **(579.15)**
8:30 A high fat diet attenuates chronic angiotensin II hypertension in the rat. **A.J. King and G.D. Fink.** Michigan State Univ. **(907.14)**
8:45 Sucrose overload during pregnancy and lactation influences blood pressure, body weight, and renin angiotensin system gene expression in adult offspring. **D.A. Mirandola, L.N.S. Furukawa and J.C. Heimann.** Sch. of Med., Univ. of São Paulo. **(907.16)**
9:00 Overexpression of the tissue renin-angiotensin system causes pulmonary hypertension in TG(mRen2)27 rat. **V.G. DeMarco, J. Habibi, R.L. Heller, R.I. Schneider, A.T. Whaley-Connell, M.R. Hayden, J.R. Sowers and D.C. Kevin.** Univ. of Missouri-Columbia and Univ. of Arizona. **(907.17)**
9:15 Angiotensin II modulation of L-type calcium current in compensated eccentric cardiac hypertrophy. **G. Laurence, Z. Alvin, A. Zhao, L. Teos and G.E. Haddad.** Howard Univ. **(907.18)**
9:30 Paradoxical role of angiotensin II type 2 receptors in resistance arteries of old rats. **F. Pinaud, A. Bocquet, O. Dumont, K. Retailleau, C. Baufreton, R. Andriantsitohaina, L. Loufrani and D. Henrion.** CNRS, INSERM U771 and Univ. Hosp., Angers. **(907.19)**
9:45 Dense core vesicle proteins IA-2 and IA-2beta—novel regulators of renin secretion and circadian blood pressure rhythms. **S.M. Kim, H. Hirai, T. Cai, L. Chen, R. Faulhaber-Walter, Y. Huang, D. Mizel, J.P. Briggs, A.L. Notkins and J. Schnermann.** NIDDK and NIDCR, NIH and Howard Hughes Med. Inst., Chevy Chase, MD. **(907.11)**

472. NOVEL ION CHANNELS IN NEUROCARDIOVASCULAR REGULATION: FOCUS ON ASIC AND TRP CHANNELS

Featured Topic

(*Sponsored by:* APS Neural Control and Autonomic Regulation Section)

WED. 8:00 AM—CONVENTION CENTER, ROOM 154B

CHAIRED: *F.M. ABBOUD*

Ion Channels

8:00 Introduction.
8:05 Contributions of ASICs to baroreceptor and chemoreceptor sensory transduction. **M.W. Chapleau.** Univ. of Iowa Carver Col. of Med.
8:30 TRP channels in regulation of cardiorespiratory sensory transduction and synaptic transmission. **D.L. Kunze.** MetroHealth Med. Ctr.
9:00 G-protein-coupled receptor regulation of acid-sensing ion channel 1a. **A. Staruschenko and J.D. Stockand.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio. **(968.1)**
9:15 Expression of TRPV1 in sensory and sympathetic neurons innervating kidney. **H. Wang, D.H. Wang and J.J. Galligan.** Michigan State Univ. **(968.4)**
9:30 ASIC2 and 3 contribute to the composition of ASICs in murine sympathetic cardiac afferents. **T. Hattori and C.J. Benson.** Carver Col. of Med., Univ. of Iowa. **(968.3)**
9:45 Compartmentalization of hypothalamic TRPV4 in lipid rafts in the rat: putative role in the central control of body fluid homeostasis. **F.R. Carreno, L.L. Ji and J.T. Cunningham.** Univ. of Texas Hlth. Sci. Ctr. at San Antonio. **(968.6)**

No Smoking

In Session Rooms, Poster or Exhibit Area

473. SEX STEROIDS IN CARDIOVASCULAR-RENAL PHYSIOLOGY

Featured Topic

(*Sponsored by:* APS Water and Electrolyte Homeostasis)

WED. 8:00 AM—CONVENTION CENTER, ROOM 145B

CHAIRED: *J.F. RECKELHOFF AND C. MARIC*

8:00 Contribution of ACE2 in female protection from progressive renal disease. **K. Sandberg.** Georgetown Univ.

8:30 Upregulation of renal angiotensinogen in male but not female SD rats during angiotensin-II-induced hypertension. **J. Sartori-Valinotti, R. Iliescu, H. Zhang, J. Williams, Z. Campbell and J.F. Reckelhoff.** Univ. of Mississippi Med. Ctr. **(972.9)**

8:45 Tempol abolishes hypertension induced by ovariectomy in a model of programmed hypertension. **N.B. Ojeda, D. Grigore, E.B. Robertson and B.T. Alexander.** Univ. of Mississippi Med. Ctr. **(972.3)**

9:00 Testosterone-induced vasorelaxation of rat mesenteric microvasculature is K^+ channel- and nitric oxide-dependent but estrogen-independent. **R.E. White, M.P. Owen and J.N. Stallone.** Med. Col. of Georgia, Philadelphia Col. of Osteo. Med. and Texas A&M Univ. Col. of Vet. Med. **(972.10)**

9:15 Absence of testosterone exacerbates diabetic renal disease. **C. Maric, C.C. Wells and Q. Xu.** Georgetown Univ. Med. Ctr. **(972.2)**

9:30 Role of endothelin in sex differences in control of blood pressure. **D.M. Pollock.** Med. Col. of Georgia.

474. EXPERIMENTAL AND COMPUTATIONAL APPROACHES FOR INTEGRATING GENOTYPE, PHENOTYPE, AND GENE EXPRESSION: TOWARD BIOLOGICAL AND DISEASE NETWORKS

Featured Topic

(*Sponsored by:* APS Physiological Genomics Group)

WED. 10:30 AM—CONVENTION CENTER, ROOM 147A

CHAIRED: *P. LUM*

10:30 Identifying key drivers of diseases through genetics and gene networks. **P. Lum.** Merck & Co. Inc.

11:00 Utilization of oligonucleotide microarray profiles from C57BL/6J (B6) and DBA/2J (D2) mice to discover aging-related genes in the lung. **V. Misra, H. Lee, A. Singh, K. Huang, R.K. Thimmulappa, W. Mitzner, S. Biswal and C.G. Tankersley.** Johns Hopkins Univ. **(947.1)**

11:15 Gene expression differences that explain strain variations in lung architecture. **H. Lee, K. Mai, A. Bierman, R. Rabold, W. Mitzner, S. Biswal and C. Tankersley.** Johns Hopkins Bloomberg Sch. of Publ. Hlth. **(947.2)**

11:30 Bridging cell-based gene expression and system biology research: What is required when tissue hypotrophy and hypoplasia occur? **L. Gao, Y. Zhou, L. Zhang, T. Zheng, W. Chen and J-S. Zhu.** Pharmanex Beijing Pharmacol. Ctr. and Pharmanex Res. Inst., Provo, UT. **(947.3)**

11:45 Systems genetics: elucidating networks that underlie heritable variation in adipose function. **B. Voy, C. Nakata, I. Malm, N. Kalupahana, N. Moustaid-Moussa, E. Chesler and L. Webb.** Oak Ridge Natl. Lab., Earlham Col., Macalester Col., Univ. of Tennessee and Christopher Newport Univ. **(947.4)**

12:00 Quantitative large-scale phosphotyrosine proteomics of vasopressin-sensitive inner medullary collecting duct cells using IVICAT N-terminal labeling and LC-MS/MS. **B. Simons, G. Wang, R-F. Shen and M.A. Knepper.** NHLBI, NIH. **(947.5)**

12:15 Pathway and network analyses of EGFR signaling from integration of time course microarray and proteomics data. **K.M. Waters.** Pacific Northwest Natl. Lab.

475. THE IMPACT OF FATTY ACIDS AND GLUCOSE ON INSULIN RESISTANCE ACROSS SPECIES

Featured Topic

(*Sponsored by:* APS Comparative and Evolutionary Physiology Section)

WED. 10:30 AM—CONVENTION CENTER, ROOM 154B

CHAIRED: *K.L. SWEAZEA AND E.J. BRAUN*

Metabolic Abnormalities

10:30 Role of glucose and fatty acids in the etiology of insulin resistance in mammalian skeletal muscle. **E. Henriksen.** Univ. of Arizona.

11:00 Regulation of energy balance in birds. **J.P. McMurtry.** USDA, Beltsville.

11:30 The importance of protein-mediated transport of fatty acids for migration in birds. **C.G. Guglielmo and J.T. McFarlan.** Univ. of Western Ontario. **(964.1)**

11:45 Insulin resistance in mammalian hibernators. **G.L. Florant.** Colorado State Univ. **(964.2)**

12:00 Carnitine palmitoyltransferase-1 activity and sensitivity to malonyl-CoA in insulin-sensitive and in insulin-resistant rhesus monkeys. **J.G. George, M.G. Gray, R.B. Bartolome, B.C. Hansen, A.S. Ryan and H.K. Ortmeyer.** Baltimore VA Med. Ctr. and Univ. of South Florida. **(964.3)**

12:15 Myogenic reactivity in mesenteric arteries of high fat fed rats. **K.L. Sweazea and W.R. Benjimen.** Univ. of New Mexico Hlth. Sci. Ctr. **(964.4)**

NO SMOKING IN SESSION ROOMS, POSTER OR EXHIBIT AREA